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October 21*st*.

MR. ORD, President, in the Chair.

Letters were read—

From the Rev. M. A. De Wolf Howe, Secretary of the House of Clerical and Lay Deputies of the General Convention of the Protestant Episcopal Church, dated October 1856, acknowledging the receipt of an invitation to visit the Museum of the Academy.

From George French Angus, Secretary of the Trustees of the Australian Museum, dated Sydney, New South Wales, May 1st, 1856, offering exchanges. Referred to the Curators with power to act.

From the Hon. W. L. Marcy, Secretary of State, dated Washington, October 1st, 1856, transmitting a collection of Books for the Academy, sent to the Department of State by Charles Huffnagle, Esq., Consul-General of the United States at Calcutta.

From Joseph Barnard Davis, dated Shelton, Staffordshire, October 3d, 1856, acknowledging his election as Correspondent.

The following papers were presented :—

"Descriptions of new species of Birds in the National Museum, Washington, and in the Museum of the Academy of Natural Sciences of Philadelphia, by John Cassin;" referred to a Committee consisting of Drs. Leidy, Bridges, and Wilson.

"Notes on the Reptiles in the collection of the Academy of Natural Sciences of Philadelphia, by Edward Hallowell, M. D." "Notice of a collection of Reptiles from Kansas and Nebraska, presented to the Academy of Natural Sciences of Philadelphia, by Dr. Hammond, U. S. A., by Edward Hallowell, M. D." Both referred to a Committee consisting of Messrs. Cassin, Le Conte, and Vaux.

"Notices of Remains of extinct Vertebrated Animals, discoverd by Prof. E. Emmons, by Joseph Leidy, M. D." "Notices of some remains of Fishes, discovered by Dr. Jno. E. Evans, by Joseph Leidy, M. D." Both referred to a Committee consisting of Dr. Bridges, Mr. Lea and Dr. Le Conte.

October 28*th*.

DR. BRIDGES, Vice President, in the Chair.

The Comittee on Dr. Le Conte's paper, read 14th inst., reported in favor of publication in the Journal of the Academy.

The Committees on Drs. Girard's and Leidy's papers, read 14th inst. ; on Mr. Cassin's, and Drs. Hallowell's and Leidy's papers, read 21st inst., severally reported in favor of publication in the Proceedings of the Academy.

Notice upon the Species of the genus SALMO, *of authors, observed chiefly in Oregon and California.*

By CHARLES GIRARD, M. D.

In the 21st volume of the "Histoire Naturelle des Poisons," published in 1848, Valenciennes subdivides the genus *Salmo* of Artedi, Linnæus, and others into three genera: the salmons proper (*Salmo*), the salmon trouts (*Fario*), and the brook trouts (*Salar*), each characterised by the number and arrangement of the vomerine teeth.

This method we have applied to the species of the present synopsis, which is but an abstract of a more elaborate memoir to be published shortly, accompanied with figures of most of the species.

Needless to say that the observations here recorded have all been made upon specimens preserved in the Museum of the Smithsonian Institution.

The sources whence specimens were obtained, are enumerated under each special heading; all being well known to the lovers and cultivators of Natural History.

Genus SALMO, (Artedi), Valenc.

GEN. CHAR. Body fusiform; head large; mouth generally deeply cleft, and armed with conspicuous teeth. Pre-maxillary (intermaxillary) bones short and rather situated upon the sides of the snout than upon its extremity; the maxillaries are attached behind them and composed of a single bone. The lower jaw is strong, and terminates frequently into a small knob or tubercle, which, in some species, acquires a very great developement. Strong and conical teeth, disposed upon a single row, are implanted upon the dentary. A few teeth on the front of the vomer; none on the shaft of that same bone; a single row of them is also observed along the palatines, and two rows upon the pterygoids and upon the tongue. There is one anterior dorsal fin, followed posteriorly by a small adipose more or less thick. The caudal is well developed, and either truncated posteriorly or slightly emarginated.

SYN. *Salmo*, ARTEDI, Gen. Pisc. ed. *Walbaum*, 1792, 58.—VALENC. Hist. Nat. Poiss. xxi. 1848, 166.

The scales, on all the species, have that common character of being deprived of those radiating grooves or furrows which extends from the organic centre of the scale to its periphery. The concentric, or lines of growth, are the only ones extant, and, in many instances (in *Salmo* and *Fario*, especially), they are interrupted or else have become obsolete upon the posterior section of the scales. In many instances, also, they have disappeared from the organic centre itself, which, under the microscope, appears perfectly homogeneous. Generally speaking, their outline is subelliptical, elongated in the direction of the longitudinal or horizontal axis of the body. Differences of minor value may be observed in each species.

1. SALMO SCOULERI, RICH. Faun. Bor. Amer. iii, 1836, 158 and 223. Pl. xcvi.—DEKAY New Y. Fauna, iii, 1842, 242.—STORER, Synops. 1848, 194.

The "Ekewan" of the natives of the Columbia river. Is identical with the "Observatory Inlet salmon." A specimen collected by Dr. John S. Newberry, under Lt. W. R. Williamson, in the Des Chûtes river, a tributary of the Columbia, O. T.

2. SALMO QUINNAT, RICH. Faun. Bor. Amer. iii, 1836, 219.—DEKAY, New Y. Fauna, iii, 1842, 242.—STORER, Synops. 1846, 196.—*Common Salmon* of Lewis and Clarke.

Body fusiform in profile, compressed. Head forming about the fifth of the entire length. Maxillary bone curved, extending beyond the orbit. Dorsal region olivaceous, studded with irregular black spots; dorsal and caudal fins similarly spotted. Region beneath the lateral line, unicolor; silvery along the middle of the flanks, and yellowish on the belly. Inferior fins unicolor. Head, above blackish grey, its sides bluish grey.

A specimen from Columbia river, was preserved by Dr. Geo. Suckley, under Gov. I. I. Stevens.

3. SALMO SPECTABILIS, GRD.—Body subfusiform in profile, very much compressed, the head forming about the fourth of the total length. Maxillary bone curved, extending to a vertical line passing somewhat posteriorly to the entire orbit. Anterior margin of dorsal fin, a little nearer the extremity of the snout than the base of the caudal. Bluish grey above; silvery beneath. Dorsal region and upper portion of the flanks spread over with light spots.

By its general appearance, this species resembles *Salmo hoodii* most, but may readily be distinguished from it by a more elongated and elliptical head, hence a mouth more deeply cleft, with the maxillary extending further back.

Specimens collected at St. Mary's Mission, Flathead valley, Oregon, by Dr. Geo. Suckley, U. S. A., under Gov. I. I. Stevens.

Genus FARIO, Valenc.

GEN. CHAR.—All the characters of the salmons, differing from the latter by the presence of only one row of teeth upon the shaft of the vomer.

SYN. *Fario*, VALENC. Hist. Nat. des Poiss. xxi. 1848, 277.

1. FARIO AURORA, GRD.—*Red Char* of LEWIS and CLARKE.—Body fusiform, compressed; head forming the fourth of the length, the caudal fin excluded. Upper jaw longest. Maxillary gently undulating; its posterior extremity extending to a vertical line passing considerably behind the entire orbit. Anterior margin of dorsal fin equidistant between the tip of the snout and the insertion of the caudal. Ground color greyish—silvery above; sides and belly yellowish orange Dorsal fin spotted.

Specimens collected at Astoria, O. T., by Lt. W. P. Trowbridge, U. S. A.

2. FARIO TSUPPITCH, GRD.—*Salmo tsuppitch*, RICH. Faun. Bor. Amer. iii. 1836, 324.—STORER, Synops. 1846, 197.—*Salmon Trout* of the settlers.

Body very much elongated, compressed, fusiform in profile; head forming about the sixth of the total length. Snout rounded, with the jaws subequal. Maxillary gently curved, dilated posteriorly, and extending to a vertical line passing slightly behind the orbit. Anterior margin of dorsal fin nearer the extremity of the snout than the insertion of the caudal fin. Ground color of dorsal region olivaceous, clouded with bluish brown, and scattered about with roundish black spots which extend over the dorsal, the adipose and the caudal fins. Upper surface of head bluish black. Sides and inferior region of the body unicolor, yellowish brown; inferior fins unicolor also. Sides of head yellowish.

A female specimen 26 inches long, caught at Fort Dallas on the Columbia River, Oregon, was skinned and preserved by Dr. Geo. Suckley, U. S. A., under Gov. I. I. Stevens.

3. FARIO ARGYREUS, GRD.—Body very much compressed, rather deep upon its middle region and quite tapering posteriorly. Head moderate, constituting the fifth of the entire length. Jaws equal. Maxillary slightly curved; its free extremity extending to a vertical line drawn posteriorly to the orbit. Anterior margin of dorsal fin nearer the extremity of the snout than the insertion of the caudal fin. Bluish grey above; silvery along the middle of the flanks; yellowish white beneath.

This species is quite characteristic in its outline, since it is much more tapering towards the tail than in any other of its congeners. In other respects it resembles somewhat *Fario aurora*, but its elongated and low anal fin will distinguish it from the latter at the very first glance.

Specimens were collected at Cape Flattery, W. T., by Lt. W. P. Trowbridge, U. S. A., and at Fort Steilacoom, Puget Sound, W. T., by Dr. Geo. Suckley, U. S. A.

4. FARIO GAIRDNERI, GRD.—*Salmo gairdnerii*, RICH. Faun. Bor. Amer. iii, 1836, 221.—DEKAY, New York, Fauna iii, 1843, 243.—STORER, Synops. 1846, 196.—Body fusiform in profile, very compressed; head comprised four times in the length, the caudal fin excluded. Upper jaw longest. Maxillary curved, extending to a vertical line intersecting the posterior rim of the orbit. Anterior margin of dorsal fin equidistant between the extremity of the snout and the base of the caudal. Caudal fin furcated. Back silvery grey; sides silvery, and belly yellowish or whitish. Body obsoletely spotted with black; similar, but more distinct, spots on the dorsal and caudal fins.

A purplish red tint is sometimes apparent over the middle of the flanks.

A specimen collected in Klamath River, O. T., by Dr. John S. Newberry, under Lt. W. R. Williamson, Top. Eng.

5. FARIO CLARKII, GRD.—*Salmo clarkii*, RICH. Faun. Bor. Amer. iii, 1836, 224—STORER, Synops. 1846, 197.

Body fusiform; head well developed, forming the fifth of the total length. Maxillary slightly bent, extending to a vertical line drawn inwardly to the posterior rim of the orbit. Jaws equal. Anterior margin of dorsal fin a little nearer the extremity of the snout than the insertion of the caudal fin. Back bluish grey; upper surface of head blackish grey; sides silvery grey; fins ash grey; dorsal and caudal spotted. Upper regions of head and body studded with irregular black spots or specks.

Specimens collected at Fort Dallas, Columbia River, by Dr. Geo. Suckley, under Gov. I. I. Stevens.

6. FARIO STELLATUS, GRD.—*Common trout* of the settlers. *Opkalloo*, Wasco Indians.

Body elongated and fusiform; head well developed, contained four times and three-quarters in the total length; jaws equal; maxillary gently curved, reaching a vertical line drawn posteriorly to the orbit. Anterior margin or dorsal fin a little nearer to the snout than the insertion of caudal fin. Back light olive; belly light yellowish white. Head, body and fins profusely spotted with black, giving it a very peculiar aspect, easily recognised amongst all the other species of the same genus.

Specimens were collected at Fort Steilacoom by Dr. Geo. Suckley, U. S. A.; at Schoalwater Bay, W. T. by Dr. J. G. Cooper; at Cape Flattery, W. T., Astoria and Humboldt Bay by Lt. W. P. Trowbridge, and in Des Chûtes River, O. T., by Dr. John S. Newberry under Lt. Williamson.

Genus SALAR, Valenc.

GEN. CHAR.—All the characters of the Salmons, but differing from them as well as from the genus *Fario* in being provided with a double row of teeth upon the shaft of the vomer, and none on the front of that same bone.

SYN. *Salar*, VALENC. Hist. Nat. des Poiss. xxi, 1848, 314.

1. SALAR LEWISI, Grd.—Body rather thickish upon its middle region; head moderate, constituting a little less than the fifth of the total length. Lower jaw longest. Maxillary gently curved, its posterior extremity reaching a vertical line drawn immediately behind the orbit. Anterior margin of dorsal fin a little nearer the extremity of the snout than the base of the caudal fin. Ground color of the upper region bluish grey, of the inferior region yellow or orange. The back, peduncle of tail, dorsal, adipose, and caudal fins, spotted with black. The belly and lower fins are unicolor, a deep orange hue existing along the rays and also in the shape of a dot upon the abdominal scales, and which disappears by long standing in alcohol.

This is the trout alluded to in Lewis and Clarke's "Travels." They "caught (at the Falls of the Missouri) half a dozen trout from sixteen to twenty-three inches long, precisely resembling in form and the position of the fins, the mountain or speckled trout of the United States, except that the specks of the former are of a deep black, while those of the latter are of a red or gold color: they have long sharp teeth on the palate and tongue, and generally a small speck of red on each side behind the front ventral fins; the flesh is of a pale yellowish red, or when in good order, of a rose colored red."—London edition of 1814, p. 192, 4to. And further on, page 487, we read: "The mountain or speckled trout are found in the waters of the Columbia within the mountains; they are the same with those found in the upper part of the Missouri, but are not so abundant in the Columbia as in that river. We never saw this fish below the mountains, but from the transparency and coldness of the Kooskoskee, we should not doubt of its existence in that stream as low as its junction with the south east branch of the Columbia."

It would be an interesting point to compare, side by side, specimens caught in the Columbia, with those of the Missouri river. We should not be surprised if the result of such a composition should refer the specimens from the basin of the Columbia to *Fario gairdneri.*

Specimens of this species were collected at the Falls of the Missouri River, Rocky Mountains, by Dr. Geo. Suckley, U. S. A., under Gov. I. I. Stevens.

2. SALAR VIRGINALIS, Grd.—Body subfusiform in profile, otherwise compressed; head comprised about four times in the length, the caudal fin excluded. Jaws subequal; posterior extremity of maxillary extending to a vertical line intersecting the posterior rim of the orbit. Anterior margin of dorsal nearer the extremity of the snout than the insertion of the caudal fin. Greyish brown above with a purplish reflection and subcircular black spots; beneath, olivaceous, unicolor.

Specimens collected by the party under Lt. Beckwith, in Utah creek, and at Sangre de Cristo Pass, upper waters of the Rio Grande del Norte (Rio Bravo).

3. SALAR IRIDEA, GRD.—*Salmo iridea*, GIBBONS, Proc. Cal. Acad. Nat. Sc. i. 1855, 36.—*Salmo rivularis*, AYRES, Proc. Cal. Acad. Nat. Sc. i, 1855, 43.—Body subfusiform in profile, otherwise compressed; head well developed, constituting a little less than the fourth of the total length. Jaws subequal; posterior extremity of maxillary extending a little beyond the orbit. Anterior margin of dorsal fin equidistant between the snout and the insertion of the caudal. Reddish brown above, with small and numerous black spots; yellowish white beneath.

Specimens were collected in the head waters of San Matteo Creek, Cal., by R. D. Cutts; at Petaluma, Cal. by E. Samuels, near Humboldt Bay, by Lt. W. P. Trowbridge, and finally specimens obtained by Dr. Ayres, of San Francisco, under the name of *Salmo rivularis*, proved identical with *Salmo iridea*, of Dr. Gibbons. Dr. Gibbons' description was drawn from a very immature specimen, but has the priority over Dr. Ayres's appellation. The aspect of the male is quite different from that of the female, so that their identification requires a very close study of their intrinsic characters.

Notices of remains of extinct vertebrated animals of New Jersey, collected by Prof. Cook of the State Geological Survey under the direction of Dr. W. Kitchell.

MACROPHOCA, Leidy.

1. MACROPHOCA ATLANTICA, Leidy.

Based upon three specimens of molar teeth, obtained by E. Davis, Esq., from the miocene marl of Cumberland County. Genus belonging to the Zeuglodont family.

Crowns of the molar teeth broader than the length, laterally compressed conical; anterior and posterior borders acute, the former with a series of two and the latter with four conical tubercles having denticulated borders; inner and outer surfaces exceedingly roughened, especially towards the base, by longitudinally acute and broken ridges. Root composed of an antero-posterior pair of fangs confluent half their length. Length of largest tooth 2¼ inches; length of crown 10 lines, breadth 12½ lines.

POLYGONODON, Leidy.

2. POLYGONODON VETUS, Leidy.

Based on a specimen of the crown of a tooth found in the marl (cretaceous) of Burlington Co., by L. T. Germain, Esq.

Length three times the breadth; transverse section elliptical; with trenchant borders; with six planes on one side and seven on the other. Length 1½ inches, breadth ½ an inch. May it be an incisor of *Mososaurus?*

ISCHYRHIZA, Leidy.

3. ISCHYRHIZA MIRA, Leidy.

Based upon an imperfect specimen of a remarkable tooth apparently of a fish, obtained by L. T. Germain, Esq., from the cretaceous green sand of Burlington County.

Crown of the tooth when perfect, apparently, laterally compressed conical, invested with smooth shining enamel. Fang more robust than the crown, curved pyramidal, quadrate in section, with the base rugged and divided antero-posteriorly. Pulp cavity expanded within the fang, closed below, and narrowing towards the crown. Probable length of tooth when entire about 2 inches; length of fang 10½ lines, breadth of its base 8 lines.

4. SPHYRÆNA SPECIOSA, Leidy,

Founded on a specimen of the crown of an anterior tooth obtained by E. Davis, Esq., from the miocene marl of Cumberland County. Posterior border of the crown nearly straight or slightly sigmoid, trenchant border minutely denticulated, sides towards the base striated, apex semi-barbed. Length 4 lines, breadth 2 lines.

EDAPHODON.

5. EDAPHODON MIRIFICUS, Leidy.

Based on eight specimens of upper and lower maxillary bones, found in the Green Sand of New Jersey.

The superior maxillaries are 3¾ inches long in the median line and 2 inches wide posteriorly; and they present the matrices of three teeth. The inferior maxillaries are 5½ inches long and 2¾ inches deep; and besides the matrices of the three large teeth, they present two or three apparent small ones near the apices of the bones, and another small one to the inner side of the largest tooth.

Notes on the Reptiles in the collection of the Academy of Natural Sciences of Philad'a.

By EDW. HALLOWELL, M. D.

Fam. *GECKOTIDÆ.*

Gen. HEMIDACTYLUS, Cuvier, Wagler, Gray, Wiegmann.

Section DACTYLOPERES ou a pouce comme tronquès (Peropus Wiegmann.)

A. H. DACTYLOPERES à lames sous-digitales entieres. D. & B.

Duméril and Bibron mention but one species belonging to this division, viz., Hemidactylus ouallensis, inhabiting Oualan, Tahiti, Vanicoro and Tongatabou. It differs very materially from the one about to be described. I do not find any species of Hemidactylus inhabiting Jamaica in the Catalogue of Reptiles in the British Museum, by Mr. Gray.

Hemidactylus præsignis, nob.

Char. Mental plate *large* and triangular; immediately behind it a transverse row of four plates, the two exterior large, the two middle quite small; *seven to eight* plates margin the upper jaw on each side, and as many the lower; scales upon the abdomen much larger than those upon throat and neck; in the latter regions granular; color brownish above, lighter brown or greyish beneath.

Description. The head is long and rather narrow, depressed in front, covered above with granulations larger upon the front; rostral plate large, somewhat quadrangular in shape; the nostril, which is more or less circular, situated at its upper and external angle; of the seven plates which margin the upper jaw the first appears to be the highest; these plates are all very distinct, and more or less quadrangular; the mental plate is large and triangular, broader than long; there are four plates immediately behind it, the two intermediate very small, the two lateral, which are in contact with the first inferior labial, quite large; the eyes are large, the pupil circular; auricular openings moderate; body moderately stout, covered above with granulations of nearly equal size; tail longer than head, neck and body, rather stout at base, covered above and upon the sides with imbricated scales, presenting below a longitudinal row larger than the others; chin and throat covered with small granulations of nearly equal size; *the abdomen is covered with smooth and quite large imbricated scales*, contrasting strongly with the small granulations upon the chin and throat; under surface of extremities covered with scales, those of the posterior much larger; granulations above; anterior surface of thighs with scales; the thumbs are deprived of nails, the remaining toes dilated with undivided subdigital laminæ; no femoral or anal pores.

Coloration. Uniform brown above, with no lines or spots; lighter brown or greyish beneath.

Dimensions. Length of head 9 lines; greatest breadth 6; length of neck and body to vent 1 inch 8 lines; of tail 3½ inches; of arm 3 lines; of forearm 3; of hands to extremity of longest finger 4; of thigh 6 lines; of leg 4 lines; of feet to extremity of longest toe 5½ lines.

Habitat. Jamaica. Two specimens presented by Caspar W. Pennock, Esq., M.D.

Gen. Remarks. This species differs very much from the only species of Peropus heretofore described; among other particulars in the following: It has four scales behind the mental instead of six. In Ouallensis there are twenty-four superior labial plates and twenty-six inferior? and the scales upon the under surface of the animal are not represented as unequal in size.

Fam. *IGUANIDÆ.*

Lézards Iguaniens ou Sauriens Eunotes, Duméril et Bibron.

NOROPS, Wagler.

The following are the characters of the genus Norops as given by Duméril and Bibron, (Erpét. Gen. Tome iv. p. 81.)

" Skin beneath the neck forming a salient fold; a sort of small throat pouch without denticulations; neither palatine teeth nor femoral pores. Fourth toe of the foot longer than the third. Scales of the body carinated, in part imbricate; those upon the sides much smaller than upon the back and abdomen. Tail moderate, not prehensile, destitute of crest like the back."

But one species of this genus has been described, viz., Norops auratus, from Surinam and other parts of Guiana. The specimen in our collection, received from the Garden of Plants, is from Mexico. The toes are dilated, but not to so great an extent as in many species of Anolis. The present species with the same generic characters, is totally destitute of any such dilatation.

Norops macrodactylus, nob.

Char. Scales upon snout tricarinate; those of supra-orbitar ridges separated from each other by a row of smaller scales; twelve rows of dorsal scales distinctly carinated; scales upon abdomen carinated; upon flanks very small;

fingers and toes not dilated; color white above and upon abdomen; a lateral vitta passing over the tympanum, extending the whole length of the body.

Description. Head long and narrow, with a marked depression in front; nostrils lateral, in a single scale, about a line from the extremity of the snout, with several rows of small scales immediately behind them; their lower margin is on a line with the exterior ridge projecting over the orbit; the rostral plate is broad and narrow, its upper margin forming an obtuse angle; the scales upon the front part of the head are more or less hexagonal, depressed, tricarinate; *the supra-orbitar ridge on each side is composed of a ridge of larger scales, separated from each other by a row of smaller ones;* eight larger scales upon the orbit; occipital plate quite distinct; six or seven supra-labials; 42 teeth in the upper jaw, the eleven or twelve posterior tricarinate; tongue triangular, smooth, deeply notched behind, very slightly in front, more or less adherent beneath; scales upon the temples subequal; auricular opening of moderate size; body slender, presenting above, twelve rows of distinctly larger scales; about as broad as long, hexagonal, each with a distinct carina extending its whole length. The *scales upon the abdomen*, of which from sixteen to eighteen rows may be counted, appear somewhat larger than those upon the back, and are also *distinctly carinated;* the scales upont he flanks are very small, quadrangular, carinated, presenting a very small spine posteriorly; extremities slender; toes not dilated, presenting a row of transverse scales beneath; tail of moderate length; a well marked gular pouch in the larger specimen, commencing at the chin and extending upon the abdomen, (in the smaller specimen, probably a female, this is scarcely visible.)

Coloration. Head, back and upper part of tail white above; abdomen and under part of tail of same color; the gular fold in the larger specimen is dark colored; sides brown, white spotted, a lateral white stripe extending from beneath the eye, along the side of the head, immediately above the tympanum, passing along the side of the neck, about a line above the shoulder, and extending the whole length of the side of the body, and becoming lost upon the tail. The white spots are upon either side of this white lateral line, but in the larger specimen they are absent, and the lateral line is of a brown color and more narrow, the ground color white.

Dimensions. Length of head 6 lines; greatest breadth 3; length of neck and body to vent 14 lines; of tail 1 inch 9 lines; of humerus 3 lines; of arm 3 lines; of hand to extremity of longest finger 2½; of foot to extremity of longest toe 6 lines. Total length 3 inches 5 lines.

Dimensions of a larger specimen. Length of head 7 lines; breadth 4; length of neck and body to vent 1½ inches; of tail ——— ; of arm 3¾ lines; of forearm 3½; of hand to extremity of longest finger 3½ lines; of thigh 5½ lines; of leg 5¾; of foot to extremity of longest toe 8½.

Habitat. New Grenada. Two specimens from the Philadelphia Museum in exchange.

Gen. ANOLIS, Daudin,

Char.—"Fingers dilated beneath the anti-penultimate phalanx, forming a sub-oval disk, more or less enlarged, provided with imbricated scaly lamellæ; beneath the neck a goitre, which when it is not distended assumes the form of a gular pouch more or less developed; palatine teeth, no pores to the thighs."—D. & B.

The genus Anolis is divided by Duméril and Bibron first into two grand divisions, viz., A. with fingers but slightly dilated, constituting the genus Draconura of Wagler and Wiegmann. This comprises but two species. B. with fingers distinctly dilated, constituting the genus Dactyloa. This latter division includes twenty-three species. These are again subdivided into (*a.*) species in which the abdomen is provided with flattened scales, smooth or carinated, and for the most part imbricated, of which there are twenty-two, and (*b.*) species with the abdominal scales granular, of which there is at present known but one, viz. Anolis camæleonides.

The subdivision *a.* is again divided into species in which the scales of the sides are much smaller than those of the back and abdomen, (1 sp.) (*b.*) In which the scales of the sides are of about the same dimension as those of the back and abdomen; this group is again divided into (*a.*) species in which the scales upon the upper and lateral parts of the body are mingled with tubercles, (1 sp. loysiana,) and (*b.*) in which the scales of the upper parts and sides of the body are homogeneous or not mingled with tubercles. This last division comprises by far the greater number, viz., twenty species. The genus Anolis is exclusively American; of the twenty-five species described by Duméril and Bibron, two are from Surinam; five from Cuba, exclusively; one from Cuba and the United States; one from Cuba and Mexico; one from Cuba and Jamaica; five from Martinique, exclusively; one from Martinique and St. Domingo, one from Chili; two from Brazil; two from the West Indies; one from the island of Tortola; one from St. Domingo, exclusively; one from Cayenne, and one of unknown origin.

Of these twenty-five species of Anolis, Duméril and Bibron represent at least one half as entirely new, (1837,) with the exception of two or three previously described by Wiegmann. One has since been described (1851,) by Prof. Aug. Duméril, in the Catalogue Methodique de la Collection des Reptiles des Museum d'histoire Naturelle de Paris. (A. Heterodermus from New Grenada.)

De la Sagra's work on Cuba contains figures of six species viz., vermiculatus, Carolinensis, lucius, Sagræi, Loysiana, (A. cantholis,) Fernandina (Camæliopsis,) (A. camælionides, D. & B.) Daudin has figured two species viz.: A. lineatus and punctatus. Anolis velifer is figured in Guerin Iconographic du Regne Animal, Tome 1, pl. 12. The Prince de Wied has figured two species of Anolis, viz.: A. gracilis, (nasicus,D . & B.) and A. viridis, punctatus, Daudin, according to Duméril and Bibron.

Among the reptiles belonging to this genus in the collection of the Academy, are several well known species, viz.: Anolis equestris, (5 sp.) A. camælonides, (1.) A. carolinensis, (28 sp.) A. punctatus, (1 sp.) A. Edwardsii, (4 sp.) the last from Jamaica, and others from Cuba, Mexico and Jamaica, which we cannot make out as described in the systems. A number of these were collected in Jamaica at the instigation of my excellent friend, Dr. Caspar W. Pennock, and generously presented by him to the Academy, and others by another friend, Dr. Betton, of Germantown. These are the more valuable, inasmuch as the Herpetology of Jamaica appears to be but incompletely known; but one species of Anolis is described by Mr. Gray as inhabiting that island, viz.: A. stenodactylus.

ANOLIS (DRACONURA, Wieg.) TROPIDOGASTER, Nob.

Char.—Head of moderate size, covered in front with elevated scales or tubercles of nearly equal size; supraciliary ridges separated from each other by two rows of smaller scales; four or five large unicarinate scales upon each orbit; occipital plate not in contact with the supraciliary ridge; temples covered with small granulations; middle rows of dorsal scales the largest; scales upon abdomen strongly carinated; color brownish, extremities banded with brown.

Description.—This species of Anolis is readily distinguished by the remarkably strong carination of the ventral scales, being even more strongly carinated than those of A. carolinensis, resembling much the scales of Phrynosoma cornutum. The head is of moderate size, snout not prolonged; the rostral plate is broader than long, rounded above; the snout is covered with elevated scales or tubercles, of nearly equal size; the scales upon the front are unequal, tricarinate; this region presents a marked depression, bounded on each side by an indistinct ridge; *the supraciliary ridge on each side is constituted by a row of five large and very distinct plates separated from each other in the middle by two rows of smaller scales;* there is a group of four or five large unicarinate scales upon each orbit, bordered with others of a smaller size, with numerous granulations exteriorly, and a row of very small plates between these large plates and the supraciliary ridge; *occipital plate rather large, irregular in shape, very distinct, separated from the supraciliary ridges by several rows of smooth scales;* nostrils lateral, circular about a line from the extremity of the snout; eight small quadrangular plates margin the upper jaw; 42 teeth may be counted in the upper jaw, the eleven or twelve posterior on each side tricuspid, the intermaxillary very small, the succeeding ones pointed and conical, and considerably larger. 38–40 teeth in the lower jaw, the twelve posterior tricuspid; tongue triangular, more or less adherent beneath, deeply notched posteriorly; temples covered with very small granulations, a little larger above; tympanum of moderate size, scales on the flanks small and granular, much smaller than those upon the back, of which the middle rows are the largest; scales of the back carinated, not very distinctly; those upon the abdomen much larger than those upon the back, quadrangular, and *very strongly carinated;* body and extremities slender; a well developed gular pouch; fingers and toes without any dilatation whatever; third and fourth fingers of equal length, fourth toe much the longest.

Coloration.—Brownish above with a greyish tinge upon the body, extremities banded with brown; abdomen whitish.

Dimensions.—Length of head, 6 lines; greatest breadth, 3; length of neck and body to tail, 13 lines; tail mutilated; length of forearm, 3¼ lines; of arm, 3 lines; length of thigh, 5 lines; of leg, 6; of hand to extremity of longest finger, 3 lines; of foot to extremity of longest toe, 7½ lines. An Anolis resplendens, D. & B?

Habitat.—New Grenada.

ANOLIS PUNCTATISSIMUS, nob.

Char. Of moderate size, scales upon supra-orbitar ridges separated from each other by smaller polygonal scales; from nine to fifteen carinated polyogonal scales upon orbit; a well marked depression upon the occiput; occipital scale separated from supraciliary ridge by four rows of scales; temples granulated; abdominal scales carinated; tail much compressed; color blue or light green, covered above and upon the sides with minute white spots; total length about 6 inches.

Description. Nostrils small, subcircular, their anterior margin about ½ a line from the extremity of the snout; scales upon front polygonal, carinated; those upon the *supraorbitar ridge large, carinated, separated from each other by smaller polygonal and more or less carinated scales;* from *nine to fifteen* or more conglomerated polygonal carinated scales over the orbit, surrounded with granules, the greater number external; a very *well marked depression upon the occiput;* the occipital plate, which is smooth, is subcircular, occupying the bottom of the cavity, and is separated from the supra-orbitar ridge by four rows of scales; seven plates upon the upper jaw, the third or fourth quadrangular, and remarkable for its extreme length;* temples granulated, auricular opening suboval, rather large, its posterior edge minutely denticulated; no crest upon neck or body; *scales upon sides granular, those upon back a little larger, especially the three or four rows upon the middle line;* scales upon abdomen with rounded posterior margins, imbricate, *carinated,* much larger than those upon sides and back; *tail much compressed,* larger than head, neck and body, verticillate, covered with carinated scales, the four or five inferior rows much the largest, its superior and inferior margins denticulated; from sixteen to nineteen lateral rows of verticillate scales may be counted, larger than the rest, the posterior extremity of the tail being destitute of them; scales along superior border of thighs and forearms very distinctly carinated; a longitudinal fold under the throat.

Coloration. Snout, front and sides of head whitish, with a tinge of yellow; body above and upon the sides light blue, (probably green during life,) covered all over with white spots; tail yellowish; no black marks or lines upon the body.

Dimensions. Length of head 9 lines; greatest breadth 5; length of body to vent 1½ inches; of anterior extremities to extremity of longest finger 1 inch; of posterior to extremity of longest toe 1 inch 9 lines; of tail 4¼ inches; total length 6½ inches.

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* Not a constant character; in another specimen eight plates.

Habitat. Jamaica. Three specimens, two adult and one young presented by Dr. Betton.

Gen. Remarks. This species, although it might, with some propriety, be named punctatus, from the great number of small white spots with which it is covered, differs entirely in appearance from the punctatus of Daudin, of which we have one specimen from Surinam. The head in punctatus is much longer, the neck more contracted and the body and tail longer. The scales on the front of the head are smooth in punctatus, carinated in punctatissimus, and their shape and general arrangement are very different; the row of plates above the supra-labials are larger in the former species; the scales upon the flanks are oblong in punctatus, those upon the back flattened; the tail is altogether different: it is subround in punctatus, with smooth scales, without verticillæ, and the much larger row of scales along the median line. The one is an inhabitant of Jamaica the other of Surinam and Brazil.

ANOLIS LEUCOCEPHALUS, nob.

Char. Of larger size than usual among the smaller species of Anolis; head much depressed in front, covered with large and smooth polygonal scales; scales of supra-orbitar ridge in contact at the middle; temples covered with polygonal scales; upon sides suboval, smooth, larger than those upon back and abdomen, interspaces filled with small granules; abdominal scales smooth; no dorsal crest; tail compressed cyclo-tetragonal at base; color whitish with blotches of green.

Description. Head long and narrow, depressed in front, where it is covered with large and smooth scales, much larger than in most other species of Anolis; scales upon the snout on the contrary very small; nostrils small, suboval, their anterior margin a line from the extremity of the snout, situated on the side of a slight prominence, just within the ridge extending from the anterior margin of the orbit to below the nostril and terminating at its anterior border; the supra-orbitar ridge is composed of four or five large scales; they are in contact at their middle, but not anteriorly or posteriorly; the supra-orbitar ridge is not prolonged anteriorly, the front, as before stated, being covered with *smooth and large scales;* differing more or less in shape; ten or eleven quadrilateral plates may be counted upon the margin of the upper jaw, 44 teeth in the lower, the ten anterior on each side pointed, the 12 posterior tricuspid; 36 in the upper, eighteen on each side, the ten anterior pointed, the rest tricuspid; tongue slender, deeply notched posteriorly, entire in front, three rows of smooth scales upon the side of the head, between the supra-orbitar plates and the anterior orbitar ridge; *temples covered with smooth polygonal scales, the superior and posterior rows the largest;* auricular openings of moderate size, suboval, not denticulated; *scales upon the sides suboval, smooth, separated from each other, the interspaces filled with small granules;* these *lateral scales are larger than those upon the back and abdomen;* those upon the neck and back are more closely united; subround or polygonal; those upon the abdomen for the most part quadrangular, perfectly smooth; no crest upon the back or neck; a large goitre extending from the chin as far as the abdomen; a very large portion of its surface when distended appears to be destitute of scales; the scales upon the under part of the thighs and in front of the arms, as well as upon the under part of the anterior extremities are quite small, having the appearance of granulations; those along the superior margin of the thighs are quite large. Extremities slender; *tail cyclo-tetragonal at base, compressed in the rest of its extent;* longer than head, neck and body, slightly denticulated above, verticillate, seven distinct vertical rows of scales larger than the rest; four or five rows upon the under part of the tail strongly carinated.

Coloration. General color whitish, with blotches of green; abdomen white, with a shade of green; throat yellowish white; in another and smaller specimen the white is more pure and the blotches brown.

Dimensions. Length of head 8 lines; greatest breadth 5 lines; length of body

2 inches 9 lines; of anterior extremities 9 lines; of posterior extremities 1 inch; of tail 3½ inches; total length 6 inches and ¼.

Habitat. Jamaica. One specimen presented by Dr. Caspar W. Pennock, the other without a label.

Gen. Remarks. The scaling of the frontal region is so entirely different from that of the other species of Anolis being composed of flat and large polygonal plates, that with the large size of the scales upon the sides of the body, larger than those upon the back and abdomen, being just the reverse of what obtains in most of the other species of Anolis, it might, with some degree of propriety be considered as belonging to a subgenus; but as the multiplication of subgenera in our opinion tends only to confusion, and to discourage the young naturalist, and is in fact, at variance with a true and philosophical study of nature, we prefer not making one, leaving it to be placed in a group different from those already recognized, viz., with scales upon the sides *larger* than those upon the back and abdomen, and larger and flat plates upon the head.

There can be no doubt, we think, that Anolis leucocephalus is a species new to Herpetology, the only one closely approaching it being that recently described by Prof. Aug. Duméril, in his Catalogue Methodique de la Collection des Reptiles du Museum d'Histoire Naturelle de Paris, p. 59. (Anolis heterodermus, A. Dum.) who observes that the only species of Anolis previously described with scales upon the sides, surrounded with small granulations is the Anolis camæleonides or Chamelopsis Fernandina of Cocteau figured in de la Sagra's splendid work on the Natural History of Cuba. Mr. Duméril's species is found in New Granada, and differs from leucocephalus in having a small denticulated carina upon the neck and back, in its carinated scales upon the tail, in the absence of a large goitre, and the presence of the voluminous scales upon the supra-orbitar ridges, and the margins of the snout.

ANOLIS SERICEUS, nob.

Char. Head small, scales upon muzzle carinated; supra-orbitar ridges separated from each other by several rows of scales; supra-orbitar scales nine in number; temples covered with granulations; scales upon back and abdomen carinated; tail not compressed, long; color brown, extremities banded and blotched with brown; brown bands upon the tail; total length 4¾ inches

Description. The head is small, with a marked depression in front; the nostrils are quite small, circular, about half a line from the extremity of the snout; situated upon the side of a well marked prominence above and within the line of the orbitar ridge, which does not extend so far as the nostril; scales upon the muzzle carinated, much smaller than those upon the front, which are subequal, polygonal, the exterior ones larger than those at the bottom of the cavities above mentioned; supra-orbitar ridge low, in *contact with the supra-orbitar scales, and separated from each other by several rows of scales;* supra-orbitar scales *nine* in number; occipital scales thickly conglomerated, forming an almost triangular patch with the occipital in the middle, not depressed, and separated from the supra-orbitar ridge by a row of three or four scales; temples covered with granulations; nine quadrangular plates upon the upper jaw; auricular openings quite large, suboval, not denticulated; tympanum distinct; body slender without a crest; scales upon the sides granular, smaller than those upon the back, which are imbricate and *carinated*; those upon the abdomen much larger than those upon the sides and back, quadrangular and very distinctly carinated; extremities slender, covered above with carinated scales, very strongly marked upon the thighs, below with granulations; *tail very long, round and thicker at base, not compressed,* tapering gradually to a point.

Coloration. Predominant color brown; a small brownish blotch upon the occiput, a much larger one across the neck, commencing behind the auricular openings and interosculating with one upon the anterior portion of the back; extremities banded and blotched with brown; brown bands upon the tail; under parts black, spotted and blotched with brown.

Dimensions.—Length of head 6 lines; greatest breadth 4 lines; length of body to vent 1 inch 2 lines; of tail 3 inches; of anterior extremities 10½ lines; of posterior 1½ inch. Total length 4 inches 8 lines.

Habitat.—El Euceros le Jalapa, Mexico. One specimen, presented by Mr. Pease.

Gen. Remarks.—In *A. Sagræi* the supra-orbitar ridges are in contact.

ANOLIS ACUTUS, nob.

Char —Head long and slender, with a longitudinal depression in front; snout prolonged, acute, supraciliary ridges in contact; temples granulated; dorsal scales carinated; the two or three middle rows the largest; abdominal scales carinated; tail much compressed; color brownish.

Description.—Head long and slender, with a longitudinal depression in front; snout prolonged, acute, rounded anteriorly; nostrils of moderate size, circular, their anterior margin nearly three-fourths of a line from the snout; they are situated upon a prominence, above and within the extremity of the supra-orbitar ridge; scales in the depression immediately behind the nostrils smaller than those upon the snout; behind the latter a double row of large smooth hexagonal scales; these are a continuation of the supra-orbitar ridge, which is composed of five or six large and smooth scales, the anterior one the largest; *these ridges are closely in juxtaposition;* the scales at the bottom of the frontal cavity are much smaller than those forming its borders; occipital plate longer than broad, sub-oval, surrounded with scales, its anterior angle almost in contact with the posterior border of the supra-orbitar ridges; eight quadrangular plates along the margin of the upper jaw; *three or four rows of scales between the superior marginal labial plates and the sapra-orbitar ridge; temples covered with granulations;* auricular openings large, circular, not distinctly denticulated; scales upon flanks granular, much smaller than those upon back and abdomen; *dorsal scales carinated*, larger than most of those upon the back; a moderately developed gular pouch extending from the chin to the abdomen; extremities slender; *tail much compressed, except at the base*, verticillate, the verticillæ near the root about 1¼ lines apart; three or four rows of large and carinated scales beneath the tail; under surface not denticulated, upper very slightly; scales upon superior margin of arms and thighs slightly carinated; posterior surface of thighs covered with granulations.

Coloration. General tint chocolate brown above with a tinge of green; under parts bluish; two brownish lines *en chevron* upon the neck; a brownish interrupted line stretching across the occiput; body brown spotted; snout of a lighter brown.

Dimensions. Length of head 9 lines; greatest breadth 5; length of body to vent 1½ inch; (tail mutilated.)

Habitat. Cuba?

Gen. Remarks. This species would appear to correspond with A. nasicus, D. & B., but in that the ventral scales are smooth.

ANOLIS AUGUSTICEPS, nob.

Char. Head long and narrow, temples granulated; scales upon back and abdomen smooth; tail moderately compressed, with a larger row of scales above along the median line; color light pea green, with numerous black spots and undulating lines.

Description. Head long, narrow, snout acute, rounded in front; anterior margin of nostril situated about half a line in front of extremity of the snout; nostrils latero-superior, the prominence, which is usually observed near the extremity of the snout, beng in this species scarcely observable; supra-orbitar ridge composed of four or five large scales, in contact in front, separated in the middle by three very small scales; occipital plate much longer than broad, surrounded by polygonal scales differing much in size, separated laterally and anteriorly from the supra-orbitar ridge on each side by a small plate; eight or nine plates along the margin of the upper jaw, on each side four or five posterior teeth larger than the others; temples covered with granulations; external openings of the ears small, not denticulated; neck and body without a crest; a moderately developed gular pouch; body slender; flanks covered with granulations smaller than those upon the back, which are *smooth; abdominal scales* larger than those upon the flanks and back, *smooth; tail of moderate length, cyclo-tetragonal at base, moderately compressed,* presenting a *row of scales above along the median line, much larger than the rest,* and below four rows of large scales strongly carinated; extremities slender.

Coloration. General tint light pea green above, with numerous black spots and undulating lines; thighs black spotted posteriorly; head above dusky white; abdomen white; throat white, black spotted.

Dimensions. Length of head 7 lines; greatest breadth 3; length of body to vent 11 lines; (tail mutilated.)

Habitat. Cienfuegos, Cuba. One specimen presented to Mus. Acad. by Capt. Baker.

ANOLIS SAGRÆI, D. & B.

Char.—Scales upon muzzle tricarinate, temples covered with granulations and larger scales; supra-orbitar ridges not in contact; occipital plate well defined, suboval, separated from the supra-orbitar ridge by three or four rows of scales; dorsal and abdominal scales carinated; tail compressed, a row of scales much larger than the others along the median line above; beneath four rows of larger scales more strongly carinated, the two inferior the largest; Color whitish with a tinge of green or brown. The young with green triangular markings along the back and tail.

Description.—Head small, snout not prolonged, nostrils small, subcircular, about three-fourths of a line from the extremity of the snout; nostrils lateral, situated upon the side of a slight prominence; supra-orbitar ridge composed of four or five scales, of which the anterior one is much the largest; this ridge is continuous with a curvilinear one upon the front, uniting with that of the opposite side at the posterior extremity of the snout, at its middle forming the external boundaries of a slight depression upon the front, at the bottom of which are several smaller scales; scales upon the muzzle smaller than those upon the front, tri-carinate; seven supra-orbitar scales, four of them quite large, *separated from the supra-orbitar ridge by a single row of small scales in contact at one point only;* occipital plate well developed, suboval, surrounded by small scales, separated from the supra-orbitar ridge by three or four rows; supra-orbitar ridges not in contact; seven distinct quadrangular plates upon the upper jaw; five upon the lower; *temples covered with granulations and larger scales;* auricular openings circular, denticulated anteriorly; of moderate size; tympanum distinct; scales upon the flanks quite small, granulated, smaller considerably than those upon the back, *which are carinated;* abdominal scales quadrangular, *carinated,* much larger than those upon the back; no crest upon neck or body; extremities slender; tail —— (mutilated,) scales carinated, *a single dorsal row much larger than the others,* four inferior rows larger and more strongly carinated than the other scales; the two middle rows the largest; a small gular pouch.

Coloration.—Above whitish with a tinge of green, blotched with olive; sides marked with white spots and fasciæ; under parts whitish with a tinge of green.

Dimensions.—Length of head 5 lines; greatest breadth 3 lines; length of body 11 lines; of tail ——; of anterior extremities 7 lines; of posterior 13½.

Habitat.—Cienfuegos, Cuba. Two specimens presented by Capt. Baker.

In a smaller but more perfect specimen, the tail is longer than the head, neck and body, the former being 1 inch 4 lines in length, the latter 1 inch 8 lines, compressed laterally; in its posterior half very slender, almost filamentary.

Dimensions of a larger specimen. Length of head 7 lines; greatest breadth 4 lines; length of body to vent 1 inch 4½ lines; tail mutilated The coloration of this specimen is whitish, with narrow brown interrupted bands upon the neck, with brownish longitudinal bands along the flanks, and transverse white spots and fasciæ; extremities banded with brown above; under parts white without spots; in another there are dark triangular spots which coalesce upon the tail including hexagonal patches of white; extremities banded with olive, under parts white. *Habitat* the same. The specimens thus marked are probably the young, and we are inclined to think are, as well as the larger brown-colored specimens, identical with Anolis Sagræi.

Another specimen of intermediate size, characterized by the same difference in form of the scales and granulations upon the temples, tricarinate scales upon the front and muzzle, and carinated scales upon the back and abdomen, presents a coloration very much resembling that of fig. 2, in pl. xiii. of De la Sagra's work, viz., on each side of the body and tail a row of dark-colored undulated markings, and dark-colored bands upon the extremities; but the scales upon the head and body in this figure are not represented as carinated. In Sagræi, as before mentioned, the supra-orbitar ridges are represented by Duméril and Bibron to be in contact; but in the text of De la Sagra's work, they are represented to be separated by a single row of scales; in our specimens we find one intermediate row of large scales, or two smaller rows, one of which is more or less imperfect.

ANOLIS HETEROLEPIS, nob.

Among the specimens in the collection of the Academy is one which at first, from the triangular markings upon the back, I supposed to be the young of the preceding species, but on a closer examination I find that it differs very materially in the following particulars: 1st. The snout is evidently less acute, more depressed, and is covered with smaller scales; the scales between the supra-orbitar ridges anteriorly are much smaller, there being but two rows in Sagræi and five in the species now under consideration; the occipital plate is larger; the granulations upon the flanks are much smaller and smooth instead of being carinated, and the ventral scales are smooth, whereas in Sagræi they are very distinctly carinated. The tail is considerably longer than the head, neck and body, cyclo-tetragonal at base, compressed in the greater part of its extent, quite slender posteriorly, with transverse rows of larger scales resembling verticillæ, about a line apart; the three or four rows of scales beneath much larger than the others and strongly carinated. The present species differs also in a marked manner from Sagræi in having the plate immediately beneath the first infra-labial and behind the mental, much smaller,* this plate being remarkably large in Sagræi—and in having the scales upon the chin between the inframaxillary rows of scales much smaller. We propose for this species the name of Anolis heterolepis. It is at once distinguished from angusticeps by the long and narrow head of the latter.

Coloration.—Light pea green above, with triangular spots of a deeper shade on each side of the median line of the back, the apices touching each other; chin and throat marked with green, presenting in the latter region irregularly longitudinal lines; somewhat similar markings upon the occiput, and a green colored blotch upon each temple; under parts of body and extremities white with a tinge of green, more marked upon the abdomen.

Dimensions.—Length of head 6½ lines; greatest breadth 3½; length of neck and body to vent 13 lines; of tail 2 inches 9 lines. Total length 4 inches 4½ lines.

Habitat.—Cienfuegos, Cuba. One specimen, presented by Capt. Baker.

Adienda.—In comparing the different species of Anolis above described with each other, the following remarks may aid in their future determination:—equestris, camæleonides, Edwardsii and Carolinensis, are so distinctly characterized as to be readily recognized from the descriptions of authors, more especially of Duméril and Bibron, the admirable descriptions of Bibron of these and the many other species throughout the work being beyond all praise. In *sericeus* the middle dorsal rows of scales are not sensibly larger than the others, and there is no larger row of scales along the middle line of the tail above; the tail is round—in Sagræi it is high and very much compressed, with a dorsal row of larger scales. In acutus the scales upon the abdomen are indistinctly carinated, in tropidogaster strongly; the scales upon the frontal region are smooth in acutus, tricarinate in tropidogaster; the supraciliary ridges are closely in contact in acutus, separated by two rows of scales in tropidogaster. But although these species resemble each other much in color, the most marked point of difference is in the toes, which are dilated in acutus, as they most commonly are in the genus Anolis, but not in tropidogaster. Angusticeps is readily recognized by its small size and narrow head; heterolepis, by its smooth ventral scales and triangular markings, and the arrangement of scales upon the temples, which are composed of granulations and larger scales, as in Sagræi. The two median dorsal rows of scales in acutus are sensibly larger than the others, and the two plates behind the mental, beneath the first and second or pre-labials, broader than those which succeed them.

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* This plate is also small in A. sericeus.

After a careful comparison of the descriptions of the species in Duméril and Bibron, I do not find any which present the same characters as those given above. Besides these, Mr. Gray has described seven species, viz.: A. occipitalis, porcatus, flavescens, lineatopus, stenodactylus, reticulatus, æneus. Of these the habitat of porcatus is Cuba; that of æneus, tropical America. Of the species of which an account is given by me, the most remarkable is A. leucocephalus, from the anomalous form of the plates upon the head and the scales upon the body, those upon the sides contrary to what usually obtains, being much larger than those upon the back and abdomen.

ANOLIS ALLIGATOR, Dum. et Bib.

Char.—Head resembling closely that of Alligator; supra-orbitar ridges closely in contact; occipital plate in contact with the supra-orbitar ridge; scales upon temples of unequal size, with an anterior marginal row of larger scales; two or three middle dorsal rows of scales larger than the others; small granules interspersed between the scales upon the body; ventral scales smooth; no dorsal or caudal crest; tail slender, slightly compressed at its middle; color dark bluish, with black maculations; a black spot beneath each axilla.

Description.—Head not elongated, stout, thick at base, front very slightly ridged, with a depression in the middle, covered as well as the muzzle with rough but not carinated scales; rostral broad and narrow; immediately behind it two large quadrangular plates, with a smaller one between; posterior to this transverse row two longitudinal rows of quadrangular plates; front covered with polygonal plates of unequal size, many of them quite large; nostrils large, subcircular, rather more than half a line from the extremity of the snout, situated within the continuation of the supra-orbitar ridge, at the anterior extremity of a slight prominence; supra-orbitar ridge composed of five large plates, rough, but not carinated, with two smaller ones behind the anterior by far the largest; the two ridges closely in contact; from five to eight or nine supra-orbitar plates not carinated, separated from the supra-orbitar ridge by a single row of small scales; *occipital plate urceolate, with large scales laterally, smaller ones behind, in contact in front with the supra-orbitar ridges;* eight quadrilateral plates margin the upper jaw on each side; three rows of scales above the marginal plates, in front of the orbit, the inferior the largest; *scales upon the temples of very unequal size, with a distinct anterior marginal row of larger scales;* auricular openings rather large, denticulated; body rather stout, *covered above with scales elevated in the middle, but not carinated; the two or three middle rows a little longer than the others; scales upon the flanks smaller than those upon the back, but not granulated; each scale upon the body is surrounded by very small and scattered granulations, resembling in size, though not so closely approximated as in Varanus; ventral scales smooth,* larger considerably than those upon the body, *rounded posteriorly;* no crest upon neck or back; *tail* longer than head, neck and body, thick at base, *slightly compressed* at its middle, very slender except toward base, covered with carinated scales; above a large median row, almost smooth beneath, and of nearly equal size in the specimen examined, except five or six rows on each side, about 5½ lines from the anus; scales upon the upper part of the thighs very slightly carinated, some of them with a double carina; a gular fold.

Coloration.—Above bluish, with black maculæ; under parts lighter, with a tinge of yellow and ferruginous; a black spot beneath each axilla.

Dimensions.—Length of head 8 lines; greatest breadth 5 lines; length of body to vent 1 inch 7 lines; of tail 2 inches 9 lines. Total length 4 inches.

Habitat.—Unknown. One specimen in Museum, belonging to the Green Collection, presented by Dr. Bache.

Gen. Remarks.—This species differs from Carolinensis in the less prolonged snout, the absence of the well-marked ridges upon it, the juxtaposition of the supra-orbitar ridges, the smooth ventral scales, and in its mode of coloration. The specimen described by Duméril and Bibron was found in Martinique. The general resemblance of the head to that of Alligator is quite striking. According to Duméril and Bibron, who have given an excellent description of this animal, the black markings under the axillæ are constant.

ANOLIS CAROLINENSIS.

We have twenty-eight specimens of Anolis Carolinensis from Cuba and the southern portion of the United States. These evidently belong to the same species; the specimens differ more or less in color, some being of a beautiful bright green with scarcely any spots, others more or less spotted and lined upon the back, throat and under part of the tail; nearly all have the dark-colored spot upon the temple; three or four of the specimens have a broad white band with irregular edges upon the middle line of the back, constituting a well-marked variety.

Habits The following remarks in regard to the habits of these interesting animals have been communicated to me by a friend in the South, who has had ample opportunities of observing them carefully:

1st. That they drink frequently.

2d. That when they shed they uniformly swallow their exuviæ.

3d. That when they happen to break their caudal appendage it is renewed. The growth of the tail, it appears, is more rapid after the broken ends have united. I have myself had for a long time several of these beautiful creatures alive, and they became so tame as whenever a drop of water was presented to them upon the tip of the finger, to leave the part of the twig on which they happened to be and eagerly run up after it, protruding their tongues and lapping very much after the manner of the dog. They change their color, frequently being sometimes more or less brown, but are usually of a light and beautiful pea green. Their favorite food appeared to be flies, which they devoured greedily.

Gen. BRACHYSAURUS, nob.

Char. Head short, covered above with polygonal flattened plates of unequal size; nostrils tubular, in a single plate, near its posterior margin; no distinct occipital plate; a row of broad hexagonal scales over each orbit; a row of large and smooth plates upon the side of the head; no transverse folds upon the neck; scales upon back, sides and abdomen carinated; the dorsal and middle row larger than the others, tectiform; no pores upon thighs or in front of anus.

B. ERYTHROGASTER, nob.

Description. The head is of moderate size, short and thick, rounded above, longer than broad, covered above with polygonal scales of unequal size, unicarinate; the rostral plate is broad and narrow, very slightly elevated; immediately behind it are two triangular plates, with a larger one between them; the nostrils are circular, looking backward and upward, situated near the posterior margin of a quadrangular plate; the supra-orbitar ridge on each side is constituted by a row of polygonal scales of unequal size, seven in number, in contact at their middle, there being no intermediate longitudinal row of scales; between the two posterior scales of the supra-orbitar ridges are two large quadrangular scales, with a broad pentagonal one behind them; a few small scales between the large supra-orbitar plates—four or five in number—and the supraciliary ridge; five or six narrow quadrangular supra-labial plates, the fourth the longest; a long and smooth plate below the orbit, in front of it five others, the second, counting from the nostril, the highest, the first immediately below the nasal plate; beneath these plates and above the supra-labials a row of smaller plates; eyelids covered with granulations; mental plate triangular, five or six inferior labials; 36 teeth in the upper jaw, the seven or eight posterior tricuspid, the others pointed, conical, the anterior quite small; 40 in the lower, the twelve last tricuspid; a row of small palatinè teeth, one on each side; tongue triangular, smooth above, deeply notched posteriorly, very slightly so in front; tympanum circular, of moderate size, somewhat depressed; neck slightly folded upon its sides; body moderately robust, covered for the most part with large scales broader than long, unicarinate, the carinæ strongly developed; the median dorsal row larger than the others, tectiform; extremities slender, covered with carinated scales; third and fourth fingers of equal length; fourth toe much the longest; tail cyclo-tetragonal at base; no femoral and no anal pores.

Coloration. Greyish white above, upon head, back and extremities brownish; beneath of same color, except upon chin and throat and sides of abdomen, which are of a beautiful pink red color.

Dimensions. Length of head 8 lines; greatest breadth 6; length of neck and body to vent 1 inch 8 lines; of tail ——— ; of humerus 5 lines; of forearm 4 lines; of hand to extremity of longest finger 6 lines; of femur 6 lines; of tibia 7 lines; of foot to extremity of longest toe 1 inch.

Habitat. New Grenada. One specimen received from Philadelphia Museum in exchange.

Gen. Remarks. The genus above characterized differs from Sceloporus, among other particulars in being destitute of femoral pores, in the presence of the row of larger scales along the median line of the back, and in the scaling of the head; from Proctrotretus, in having carinated and not smooth scales upon the abdomen, as well as in the two last mentioned particulars. In Ophryessa, in Enyalius, Wagl., and in Microlophus, there is a larger row of scales along the median line of the back, and in Dipso-saurus also, to which it has little or no other resemblance; but in Ophryessa the scaling of the head is quite different, presenting numerous small and rough polygonal tubercles above; the scales upon the back are not so broad, and are much more strongly carinated. Ophryessa is a much larger animal, and has a well marked though not elevated crest.

Gen. PROCTROTRETUS, Duméril et Bibron.

Char. Head subpyramido-quadrangular, more or less depressed, cephalic plates moderate, polygonal, occipital in general not very distinct; palatine teeth; neck folded upon the sides, or entirely simple; tympanic membrane slightly depressed; body rounded or slightly depressed, covered with imbricated scales, the superior carinated, the inferior smooth; neither caudal nor dorsal crest; toes simple; tail long and conical, or moderate, slightly depressed; no femoral pores; anal pores in the males.—D. & B.

PROCTROTRETUS NIGER, nob.

Char. Of small size; color black or dark brown above. Scales of moderate dimensions, quadrangular, strongly carinated, the margin of the scales distinct; a fold upon the side of the neck, bifurcating anteriorly; temples covered with scales; post-auricular regions with granulations, and sides of the neck with small scales; a single row of plates above the supra-labials; posterior surface of thighs granulated.

Description. Head small, depressed, with a rather acute snout, covered above with polygonal, unequal scales, not carinated; immediately behind the rostral are three plates, the two external much more extended transversely than the middle; behind these are three others, the two lateral more extended longitudinally, and more narrow than the middle one; exterior to these lateral plates, and between them and the nasal, are two small quadrilateral ones; immediately behind the middle of the three plates described is a large heptagonal one, with a quadrangular plate situated obliquely, and much more broad than long, on each side, in contact with its antero-lateral facet; on the left side this contact is interrupted by a small supplementary quadrangular plate; the large hexagonal plate occupies the middle of the frontal region, and lies between the two large quadrangular plates, constituting the anterior extremity of the supraciliary ridge; this ridge is composed of eight plates, more or less quadrangular, in contact in the middle, the upper surface of each plate, as well as that of the other plates of the head, presenting numerous vermiculations; the nostrils are subcircular, each in a single plate, nearer its posterior margin; immediately behind the nasal is a very small plate, and immediately below it another, but larger, between it and the single row of plates above the supra-labials; posterior to these two plates are five others of unequal size, occupying the interspace between those just mentioned, and the anterior inferior margin of the orbit; of these the uppermost is the largest; there are five superior labials; the superior surface of the orbits is protected by numerous plates, of which two rows are conspicuously larger than the others, the innermost, the most extended transversely, consisting of four or five large plates, more or less vermiculated upon their upper surface; the external superior border of the orbit is composed of narrow longitudinal plates placed one above another; body slender, covered above and upon the sides with 33 rows of quadrangular carinated scales, the carinæ very distinct, those upon the back the strongest, arranged in ten longitudinal and parallel rows, each carina running along the middle of the scale, the margins of which are well defined, but not extending in a point beyond it; auricular opening rather large, a few scales in front; temples covered with *scales;* a fold upon the neck, bifurcating in front; post-auricular region granulated; immediately posterior to the mental are three or four large and more or less quadrangular plates; extremities slender, upper surface covered with carinated scales; posterior surface of thighs granulated, tail of moderate length, longer than head, neck and body tapering to a point, cyclo-tetragonal at base; posterior margin of anus granulated, the scales immediately behind the granulations smooth; scales of chin, throat, abdomen and under surface of extremities smooth; no transverse fold upon neck; no pores in front of the anus.

Coloration.—Very dark brown, or black above; a very narrow and somewhat indistinct yellow band, commencing at the axilla and extending along the flanks; a broader brownish one and less distinct above; under parts bluish mingled with copper color, with metallic reflections; chin and throat conspicuously black, spotted, the larger spots in front; minute black dots distributed over abdomen and under surface of extremities.

Dimensions.—Length of head 4½ lines; greatest breadth 2¾ lines; length of neck and body 1 inch; of tail 1 inch 9 lines; of arm 2 lines; of forearm 2 lines; of hand to extremity of longest finger 3 lines; of thigh 2¾ lines; of leg 3 lines; of foot to extremity of longest toe 6 lines; of tail 1¾ inch. Total length 3 inches 1½ line.

Hab.—Quinquina Island. A single specimen, presented by W. W. Ruschenberger, M.D., U. S. N.

Gen. Remarks.—The scales in this species are much smaller than in Proctrotretus nigro-maculatus, Wiegmanni, pictus or Chilensis, being about the size of those of P. tenuis, but quite different in shape. It is perhaps the smallest of the Proctrotretes, and is very readily recognized.

ECPHYMOTES, Cuvier.

ECPHYMOTES TORQUATUS.

A female specimen of Ecphymotes torquatus from Buenos Ayres, presented by Dr. A. Kennedy, presents the following appearances, in which it differs from those described. The rostral plate is more extended transversely and is less high; immediately behind the rostral are two large subquadrate plates instead of four much smaller, and behind these two large subtriangular ones, resembling very much the anterior frontals in many species of serpents; these are separated from the rostral by two narrow plates on each side; posterior to these is a transverse row of five plates, the two external subequal, the middle one long and hexagonal.

Coloration. The black vertical band in front of the shoulder exists, but is not seen upon the upper part of the neck; the general color is olive, without spots or markings distinctly visible; anterior extremities banded in front; no brown marks in front of the anus or upon thighs, these portions of the animal as well as under part of tail being white without any spots whatever. The specimen is largely distended with eggs, one of which measures eight lines in length by five and a half in breadth. A younger specimen from the same locality is more or less spotted with black upon the back, the spots assuming somewhat the form of narrow irregular interrupted bands, upon a ground color of olive; extremities and tail black spotted, inner part of thighs and tail white; black band of neck interrupted in the middle. The plates upon the head in this younger specimen are arranged in the following manner: Four in a transverse row immediately behind the rostral; then two large quadrangular plates; then a transverse row of five, posterior to which is another row of larger plates, the two exterior forming part of the supra-orbitar ridge.

URODELA, Duméril.

HEREDIA OREGONENSIS, Girard.

We received a few days ago, with a collection of Crustaceans and Fishes from California, a specimen of a Caducibranchiate Urodele, which appeared to me to me new, and for which it occurred to me the name Heteroglossa might be proper to distinguish it from the ordinary Bolitoglossidæ; but in looking into the last number of the Proceedings of the Academy of Natural Sciences, I find a description of a specimen from Oregon, by Mr. C. Girard, which corresponds in so many particulars with it, the chief point of difference being the length of the tail, which is represented as being longer than the head and body, that I hesitate to consider it as new.

Gen. char. Maxillary teeth small; two longitudinal patches of sphenoidal teeth, diverging posteriorly, arranged in oblique rows; a curvilinear series of vomero-palatine teeth on each side, almost in contact posteriorly, passing between the posterior nares and the anterior margin of the orbit, separated from the sphenoidal by an interspace without teeth; tongue supported by a cylindrical pedicel, attached in front; free posteriorly and at the sides; no parotids; toes 4—5.

Sp. char. Size moderate; tail cylindrical; color olive, or brownish yellow, minutely spotted with black above and upon the flanks; under parts Indian yellow.

Description. Head broader than body, truncate anteriorly, nostrils small and wide apart, about half a line from the margin of the upper jaw; eyes prominent, pupil elliptical; gape of the mouth linear throughout the greatest part of its extent; no parotids; no lateral lines of pores along the body; a transverse fold across the neck; maxillary teeth quite small, internal nares of moderate size, ovoid, a series of vomero-palatine teeth on each side meeting posteriorly, presenting the form of an arch, the convexity forward, passing immediately behind the internal nasal opening, between it and the anterior border of the orbit, extending about three-fourths of a line beyond the external margin of the nasal foramen. Two patches of longitudinal sphenoidal teeth, meeting in front, but diverging posteriorly, leaving an interspace in the shape of the letter V reversed; the teeth in these patches are arranged in oblique rows, converging on each side toward the longitudinal interspace between them, and are not closely set; the tongue is obcordate, entire, longer than broad, supported upon a central cylindrical pedicel as in the mushroom-tongued Urodeles, *but is attached in front* at the tip, and by a semi-transparent membrane along its middle as far as the pedicel, the posterior portion and sides being free ; body and extremities slender ; four fingers and five toes ; first finger very short, the third the longest ; first toe quite short, considerably shorter than the fifth, third and fourth of about equal length ; two well marked tubercles upon the palms of the hands, the one at the base of the first, the other at the base of the fifth finger ; none are observed upon the toes ; tail tapering, cylindrical, slightly compressed, not so long as head, neck and body.

Coloration. Brownish above, but on close inspection with a magnifying glass, the whole surface appears to be covered with minute black points upon an olive ground ; the sides are also minutely punctated with black ; under parts Indian yellow, without spots.

Dimensions. Length of head 5 lines ; greatest breadth 4 ; length of neck and body to vent 1 inch 7 lines ; length of tail 1 inch 7 lines ; total length 3 inches 7 lines.

Habitat California? (This Urodele was sent from California without indication of locality, it may therefore have been found in Oregon.) One specimen presented by Mr George B. Davidson, of the U. C. Survey.

Gen. Remarks This remarkable Urodele differs greatly in the arrangement of its teeth from Aneides, the rows of which are closely approximated and thickly set, (Fam. Plethodontidæ,) but resembles more closely Spelerpes, but differs from it more especially in the tongue being tied down anteriorly, whereas in the ordinary Bolitoglossidæ it is mushroom-shaped, as the name indicates, and free all around ; the tongue in the Bolitoglossidæ is for the most part entire, (in longicauda it is notched posteriorly,) but the minute arrangement of the sphenoidal teeth is different. This animal would appear to belong to the group *Ensatinina* of Mr. Gray, but in Triton ensatus (Ensatina Escholtzii, Gray,) there are no sphenoidal teeth.

Appendix. Since the above was written my attention has been directed by P. L. Sclater, Esq., of the Zoological Society of London, to the work of Mr. Gosse, entitled a Naturalist's Sojourn in Jamaica, by Philip Henry Gosse, F. L. S., &c., London, 1851, in which I find descriptions of the species of Anolis, iodurus and opalinus, (see also Annals and Magazine of Natural History, second series, 1850, p. 344, 345.) Anolis leucocephalus is identical with Placopsis ocellata ; Gosse, p. 346. Besides the above, Mr. Gosse has described another species of Anolis inhabiting Jamaica, viz., Draconura catenata, and two species of Sphæriodactylus, viz., S. argus and oxyrhinus. The author gives a very interesting account of the habits of the two species iodurus and opalinus described by him (p. 220, 227.) A figure is also given of Anolis, (Dactyloa) Edwardsii, pl. iv. The reptiles of Jamaica appear for the most part to be specifically distinct from those of Cuba. The following is a comparative list of those enumerated by Duméril and Bibron, Mr. Gray, Mr. Gosse, and others, including those described or mentioned in this paper. To these I have added a list of the reptiles of Martinique, for the habitat of which I am indebted to Dumeril and Bibron.

CUBA.	JAMAICA.	MARTINIQUE.
CHELONIA.	CHELONIA.	CHELONIA.
CHELONIADÆ.	CHELONIADÆ.	CHELONIADÆ.
Chelonia mydas.	Sphargis coriaeea.	
Chelonia virgata.		
Chelonia caouana.		
TESTUDINIDÆ.	TESTUDINIDÆ.	TESTUDINIDÆ.
	Testudo carbonaria?	
EMYDIDÆ.	EMYDIDÆ.	EMYDIDÆ.
Emys decussata.	Emys decussata.	
Emys rugosa.		
SAURIA.	SAURIA.	SAURIA.
CROCODILIDÆ.	CROCODILIDÆ.	
Crocodilus acutus.	Crocodilus acutus.	
Crocodilus rhombifer.		
GECKOTIDÆ.	GECKOTIDÆ.	GECKOTIDÆ.
Hemidactylus mabouia.	Hemidactylus stenodactylus.	Hemidactylus mabouia.
Sphæriodactylus sputator.	Sphæriodactylus sputator.	Sphæriodactylus sputator.
Sphæriodactylus cinereus.	Sphæriodactylus punctatissimus	Sphæriodactylus punctatissimus
	Sphæriodactylus argus, G.	Sphæriodactylus fantasticus.
Gymnodactylus albogularis.	Sphæriodactylus oxyrhinus, G.	Gymnodactylus albogularis.
	Platydactylus theconyx.	Platydactylus theconyx.
IGUANIDÆ.	IGUANIDÆ.	IGUANIDÆ.
Cyclura Harlani.	Anolis Edwardsii	Anolis alligator.
Anolis equestris.	Anolis punctatissimus, H.	Anolis marmoratus.
Anolis Sagræi.	Anolis Sagræi.	Anolis cristatellus.
Anolis vermiculatus.	Anolis iodurus, G.	Anolis vermiculatus.
Anolis Carolinensis.	Anolis opalinus, G.	Anolis lineatus.
Anolis lucius.	Placopsis ocellata, G.	Anolis pulchellus.
Anolis angusticeps, H.	Cyclura Collei.	Anolis chloro cyanus.
Anolis heterolepis, H.	Cyclura lophoma.	Basilicus mitratus.
Anolis (Acantholis) Loysiana.		Iguana tuberculatus.
Anolis camæleonides (Chamæleolis Fernandina)		Iguana nudicollis.
		Holotropis Herminieri.
Holotropis microlophus.		Tropidolepis (Sceloporus) undulatus?
Holotropis vittatus.		
LACERTIDÆ.	LACERTIDÆ.	LACERTIDÆ.
Ameiva Auberi.	Ameiva Sloanei.	Ameiva Pleii.
		Cnemidophorus lemniscatus.
		Cnemidophorus sexlineatus.
CHALCIDIDÆ.		CHALCIDIDÆ.
Amphisbæna punctata.		Amphistæna cœca
SCINCIDÆ.	SCINCIDÆ.	SCINCIDÆ.
Diploglossus Sagræi.	Eumeces Sloanei.	Eumeces mabouia.
	Diploglossus Shawii.	Diploglossus Pleii.
		Gymnopthalmus quadrilineatus.
OPHIDIA.	OPHIDIA.	OPHIDIA.
BOIDÆ.	BOIDÆ.	BOIDÆ.
Tropidurus melanurus.	Chilabothrus inornatus.	Epicrates cenchris.
Leionotus maculatus.	Leinotus maculatus.	
Epicrates anguliferus.		
Notophis bicarinatus.		
	LEPTOGNATHIDÆ.	
	Ischognathus DeKayi.	
		OXYCEPHALIDÆ.
		Oxybelis æneus.
DIACRANTERIDÆ.	DIACRANTERIDÆ.	DIACRANTERIDÆ.
Dromicus antillensis.	Dromicus antillensis.	Dromicus antillensis.
Dromicus cursor.	Natrix atra? G.	Dromicus cursor.
Dromicus angulifer, (Coluber cantherigerus.)	Natrix callilæma? G.	Dromicus Pleii.
	Natrix capistrata? G.	
TYPHLOPIDÆ.	TYPHLOPIDÆ.	
Typhlops lumbricalis.	Typhlops lumbricalis.	
Typhlops Richardii.		
		STENOCEPHALIDÆ.
		Homalocranion semicinctum.
		DIPSADIDÆ.
		Dipsas annulata.
		CROTALIDÆ.
		Bothrops lanceolatus.
BATRACHIA.	BATRACHIA.	BATRACHIA.
HYLIDÆ.	HYLIDÆ.	HYLIDÆ.
Hylodes Ricordii.	Litoria luteola, G.	Hylodes martinicensis,
Trachycephalus marmoratus.	Trachycephalus lichenatus, G.	
Phyllobates bicolor	Hyla brunnea, G.	
BUFONIDÆ.		BUFONIDÆ.
Bufo peltocephalus.		Bufo agua.

Hence it would appear, that with the exception of Emys decussata, Crocodilus acutus, Sphæriodactylus sputator, Anolis Sagræi, Leionotus maculatus, Dromicus antillensis, and Typhlops lumbricalis, unless several of the others have been incorrectly determined, the species belonging to the Islands Jamaica and Cuba, although but 90 miles distant, are altogether different, and that several of the genera which exist in the one are wanting in the other. Besides the above we have in our collection a small serpent of the size of a Calamarian, with a very short and broad frontal (vertical) plate, a large pre-ocular, no loral and broad gastrostega, carinated scales and a double row of black spots along the back, from Jamaica, included in the donation of Dr. Pennock, which is identical with Storeria DeKayi, B. & G. (Ischognathus DeKayi, Dum. et Bib.* With the exception of Anolis Carolinensis, the reptiles of Cuba differ in their species altogether from those of the United States, even the southern portion of it; and not only so, but with the exception of Emys, Hylodes and Bufo, and perhaps Ischognathus, there does not appear to be even a genus common to the two countries. Were the Herpetology of each of the West India Islands fully known and very accurately determined, many highly interesting and important facts would be developed, tending much to elucidate the laws which govern the geographical distribution of species.

Notice of a Collection of Reptiles from Kansas and Nebraska, presented to the Academy of Natural Sciences, by Dr. Hammond, U. S. A.

BY EDW. HALLOWELL, M.D.

Ord. *CHELONIA*, Brog.

Fam. EMYDIDÆ, Gray.

ELODITES OU TORTUES PALUDINES, Duméril & Bibron.

Five specimens of Emys pseudo-grographica, (young.) The shell of the largest of these specimens measures two and a half inches in length, by two inches, five lines in breadth, and is almost orbicular; the carinæ upon the vertebral plates are very distinct. Color of carapax olive, with orange colored concentric and irregular lines, most conspicuous when the epidermis is removed; an areola towards the posterior margin of each of the plates; sternum yellowish, marked with irregular dark colored lines; extremities and head and neck marked with longitudinal lines of yellow and black; a curvilinear transverse yellow band on each side, behind the eyes continuous with one running down the neck, and a longitutinal one between the eyes; 24 marginal plates. This species, according to Prof. Holbrook, is found in many of the rivers that empty into the Mississippi, but never east of the Alleghanies.

Ord. SAURIA, Brogn.

Fam. IGUANIDÆ.

Three specimens of Crotaphytus collaris, Holb.

These differ from those from the Creek boundary presented by Dr. Woodhouse, and another large specimen in the collection of the Academy from Arkansas, in wanting the numerous spots with which the latter are covered. The black bands upon the neck and between the shoulders are very distinct; the general color above is blue, more or less deep, with a tinge of green, with transverse bands of white upon the body and tail; deeper bands of blue upon the posterior extremities; under parts white, with dark colored markings under the chin in two of the young; the plates upon the front in all the specimens are, for the most part larger than those upon the muzzle; those constituting the semi-circular ridges along the internal margin of the orbit quite large; occipital plate distinct;

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*This species has a wide range, being found in Massachusetts and Georgia. Duméril and Bibron say they have received a specimen from Mexico.

many of the plates (11 or 12,) upon the orbits are much larger than the rest; this difference exists also in the Creek boundary specimens, but is not so well marked; femoral pores very distinct; these in some of the Creek boundary specimens are very large, (½ a line in diameter,) much larger than in any specimen of Sceloporus I have seen; eight eggs quite large, from eight to nine lines in length, were counted in the ovaries of the largest; in which also the femoral pores were very distinct, so that the femoral pores do not belong exclusively to the male in Crotaphytus; the stomach which is a large and rounded sac was distended with the debris of grasshoppers and coleopterous insects; one of the former nearly entire.

Habitat.—Arkansas, Louisiana near the confines of Texas, Western Texas, Kansas.

The two specimens of Holbrookia maculata (Cophosaurus Troschel) do not differ very materially from the many specimens we have from the Creek and Cherokee countries presented by Dr. Woodhouse; the marginal plates upon the upper jaw constituting the delicate fluting in that region are more narrow, and the markings upon the back are more regularly disposed, and the white spots are much less numerous than in some of the Creek specimens. The plates upon the head will be found to vary considerably in individual form and arrangement in the latter.

Habitat.—Creek boundary, Western Texas, New Mexico.

The specimens of *Phrynosoma cornutum* present nothing remarkable; the abdomen and chin of a young one are spotted all over with black spots, and lines of different shapes.

Habitat.—Arkansas, western country from Missouri to Texas, Creek and Cherokee countries, Western Texas, Santa Fe, New Mexico, Kansas.

LACERTIDÆ.

Seven specimens of Cnemidorophous gularis, Baird and Girard. These are distinguished from C. sexlineatus by the broader stripes and larger size of the scales; the fronto-nasal plates appear also to be comparatively smaller in gularis.

Habitat.—Texas, New Mexico and Kansas.

SCINCIDÆ.

Five specimens of Plestiodon obsoletum, B. & G.—No two of them are colored precisely alike. They all have a general resemblance, yet each differs from the other. .This difference is produced mainly by the greater or less extent to which the scales are spotted with black; in one specimen, the greater part of each scale upon the body being thus spotted; in another, the ground color, which is drab, greatly preponderates; head brown or olive, marked with dark lines and spots, under parts silvery white.

Habitat.—Borders of Rio San Pedro, Texas, Kansas.

CHALCIDIDÆ.

Ophisaurus ventralis, two specimens.

These present different markings; they both are drab colored above, with a brown band running from the occiput along the middle of the back to the extremity of the tail; sides black, with two narrow white vittæ, the upper terminating five inches from the extremity of the tail; the lower on the left side 4 inches 2 lines from the anus; and on the right 1 inch 4 lines; three white lines upon the tail anteriorly; two narrow brown bands on each side of the abdomen. Length of head, neck and body 5½ inches; of tail 1 foot 2 inches. The other specimen is olive above, with a brown band along the middle, but the neck and anterior part of the body is marked with white narrow ocellated spots, and and instead of the lateral vitta there are upon the sides on a black ground, three rows of interrupted white spots, often united so as to form a line with very imperfect margins; under surface silvery white; length of head, neck and body 7¾ inches; of tail, 1 foot, 5 inches, 4 lines.

A specimen from Verdigris river resembles the first in its markings; another and very large and stout specimen in the collection of the Academy is black above without any vitta whatever, but marked with transverse longitudinal rows of small spots; in another, the ground color above is brown, and black upon the sides with longitudinal lines of black expanded at intervals, and in these places surrounded with light colored spots, the spots upon the black ground and on the sides much larger; in another, there are longitudinal lines of white spots upon a black ground upon the back, with narrow lines of the same color upon the sides; in another, there are transverse bands of white spots on each side, upon the back, which is of a beautiful light brown, and white spots upon the head, the lateral white lines barred at intervals with cross bars of the same colors, with ten rows of dark brown spots upon the middle of the tail. A specimen from South Carolina is light brown above with lateral rows of darker brown; another from North Carolina is of a uniform drab color above, the scales upon the sides which are greyish marked with numerous black spots of different dimensions and irregular in shape, the abdomen *dark slate color;* under part of tail olive with four longitudinal lines of black spots, so that it will be seen that this species varies much in its mode of coloration. According to Dr. Holbrook, the under surface during life is bright yellow, most remarkable at the abdomen. Duméril and Bibron describe four varieties, including two nominal species, (punctatus and striatulus,) mentioned by Cuvier.

Habitat.—From Southern Virginia to Cape Florida, Alabama, Mississippi, Louisiana, and in many of the States bordering on the Missouri and Ohio rivers. Its Northern range west of the Alleghanies is Michigan, according to Dr. Holbrook.

Ord. OPHIDIA.

SERPENTES INNOCUI.

Fam. CALAMARIDÆ.

The Calamarians belong to the second section or sub-order of Ophidians, the Aglyphodont or Azemiophid Serpents of Duméril and Bibron, characterized as having "recurved, conical, rounded, full and smooth teeth, without cannelation at their points, implanted in both jaws." The serpents belonging to this family have the "body very slender, rounded, and almost of the same thickness from the head to the tail." Duméril and Bibron assert that all the serpents belonging to it are terrestrial, and divide the family into nine genera, distributed in the E. Indies, (Oligodon without palatine teeth,) (4 sp.) Java, Sumatra, Borneo and Celebes (Calamaria,) (12 sp.) Mexico, Cayenne, Surinam, Santa Cruz, Bolivia, New Granada, Java, (Rabdosoma,) (6 sp.) Cape of Good Hope, (Homalosoma,) (1 sp.) Celebes, Macassar, (Rabdion,) (2 sp.) Java, (Elapoidis,) (1 sp.) Ceylon, and the Phillipines, (Aspidura,) (1 sp.) N. America, (Carphophis,) (2 sp.) and (Conocephalus) (1 sp.) To the two last, originating in N. America, we add the following, contained in the Kansas collection, and which, in its general characters, bears a strong resemblance to Homalosoma, but differs from it in the carination of the scales, the acuteness of the snout, the shape of the frontal (vertical) plate, &c.

Gen. MICROPS, nob.

Char. Head small, flattened above and posteriorly, depressed in front; snout acute; nine plates upon the top of the head, the pre-frontal considerably larger than the internasals; frontal plate short, but longer than broad, the two lateral margins nearly straight; nostril in a single plate, near its anterior margin; a frenal, one anterior ocular and two posterior oculars; seven superior labials, the fifth and sixth the largest, the sixth intercalated between the fifth and seventh, the eye resting on the third and fourth; occipital plates margined externally by a row of four or five plates; pupil circular; posterior geneials very long, anterior small and transverse; teeth minute, existing both in the palate and maxillaries; scales strongly carinated, except the two inferior rows, elongated, slightly notched posteriorly; gastrostega not ascending high upon the flanks; tail short and pointed, with a double row of scutes.

MICROPS LINEATUS, nob.

Char. Size about the same as that of Homalosoma lutrix.

The head is quite small, slightly rounded above, depressed in front; nine plates; snout acute; nostril in a single plate, which is more or less quadrangular, quite near its superior margin, and very much nearer its anterior than its posterior extremity; on the left side this plate is cleft inferiorly below the nostril; a loral; one anterior orbitar; two posterior orbitars; seven superior labials, the eye resting on the third and fourth, the sixth acutely angular, intercalated between the fifth and the seventh, not reaching the margin of the jaw; body slender, thicker in the middle, covered with 19 rows of scales, all of which are very strongly carinated, except the three or four inferior rows, the last being quite smooth and larger than the others; scales with the exception of the three inferior rows on each side narrow, subelliptical, bi-punctate posteriorly, the carina reaching the entire length of the scale; tail short and tapering to a point; abdom. scut. 138. subcaud. 34; a single præanal.

Coloration. Brown above, with three narrow yellow dorsal vittæ; the middle occupying one row and half of the adjoining row of scales; head above brown; upper jaw light yellow; abdomen and under part of tail yellow, with a double row of triangular spots of a bluish green color along the middle and base of tail; these spots are sometimes confluent at their bases; the spots beneath the epidermis are perfectly black.

Dimensions. Length of head 4 lines; greatest breadth 2; length of body to vent 7 inches 5 lines; of tail 1 inch 4 lines.

Habitat. Kansas. One specimen in Mus. Acad., presented by Dr. Hammond.

Gen. Remarks. At first sight this serpent might be taken for a young Tropidonote, but a close inspection of the frontal and other plates and the shape of the head indicate the difference. It is of nearly the same size as Homalosoma lutrix of the Cape of Good Hope, but in that genus the snout is obtuse and the shape of the frontal plate not the same, and that of the scales, which are smooth, is very different; the nasal, however, is in a single plate. In Ischognathus Dekayi the frontal plate is broader, the nostrils between two plates, and there is no loral (Leptognathien, D. & B.) In Conocephalus the snout is acute, and the frontal plate similar but more narrowed, but there is no pre-ocular and but one post-ocular, a long frenal and the nostril between two plates. In Streptophorus (Leptognathien) the frontal is broader, the pre-frontals very greatly larger than the inter-nasals; the nostrils between two plates; no pre-ocular, two post-oculars and a long frenal.

Fam. CORYPHODONTIDÆ.

CORYPHODON FLAVIVENTRIS.

Among the reptiles presented to the Academy by Dr. Hammond is one specimen of the Coluber flaviventris of Say, (Say's Expedition to Rocky Mountains, vol. i, p. 185.) This specimen is olivaceous above, yellow beneath, except upon chin and throat, and along margins of lower jaw, which are white; under part of tail of a lighter yellow than that upon abdomen; seven superior labials, the eye resting on the third and fourth; a small supplementary plate on each side, below the anterior frontal, intercalated between the second and fourth labials; a quadrangular frenal, two post-oculars; nostrils between two plates; plates upon temples as described by Say; 17 rows of smooth elongate scales near the middle of the body; the inferior row the largest; 17 rows upon neck, 15 near the tail; tail of moderate length, longer than in Ablabes. 171 abdom. scuta; a bifid præanal; 56 sub-caud. (tail mutilated). Total length 2 ft. 6 inches; of head, neck and body 2 ft.; circumference 2 inches. Say describes the posterior and basal edge of the scales as black, and in one specimen an indistinct double row of reddish brown spots irregularly alternating on each side of the abdomen; these markings are not observed in Dr. Hammond's specimen.

The genus Coryphodon of Duméril and Bibron takes its name from two Greek words Κορυφη, Cacumen, summum in quâvis re, summit, and οδους, tooth, indicating the progressive augmentation or length of the teeth as they recede backward, the following being the essential characters as given by the learned authors, Erpet. Gen. Tom. vii. p. 178.

LES CORYPHODONTIENS.

Char. "Serpents with smooth unequal teeth; the anterior much shorter than those which follow, and increasing successively in length from in front posteriorly." They constitute the seventh family of the great sub-order of Aglyphodont Ophidians. The characters of the genus are the same as those of the family. The scales of this genus are more or less elongated, *smooth or carinated.* It is the only one of the family, and comprise six species, inhabiting North and S. America, the E. Indies and the Indian Archipelago, (Sumatra, Phillipines). Several serpents have been described under the generic name Bascanion by Prof. Baird and Girard, having all *smooth* scales, but as the characters are drawn from the external forms alone and not the *teeth,* and inasmuch as many of these are of secondary importance, and not always constant, this genus, it appears to us, cannot be retained. *e. g.* The head in *Coryphodon* pantherinus, a South American species, is not narrow but broad, the supplementary plate beneath the ant-orbitar is absent, andthere are but 15 rows of scales, &c. In a specimen of Coryphodon constrictor before me, the eye rests on the fourth and fifth superior labial, which is prolonged upward, and the supplementary plate below the large anterior orbitar is between the third and fourth upper labials; the same occurs in another specimen belonging to the Bonaparte collection. This arrangement, however, is probably exceptional. In the young specimen found at Beesley's Point, and which does not differ materially in its coloring from that discovered in Kansas, there are but 5 superior labials, the third and fifth greatly prolonged, the eye resting solely on the third, and there are three posterior labials. The external characters of Masticophis apply almost equally well to Psammophis, an African and Asiatic genus, yet how different the form and arrangement of the teeth in Masticophis flavigularis (Herpetodryas) and in the latter genus.

Among the specimens is one which appears to be a young Coryphodon constrictor; the general coloration resembles very much that of Ablabes triangulum, but it is at once distinguished by the shape of the head and the form of the frontal plate. The following are its characters, which may be interesting, showing the great change which age sometimes develops in the coloration of serpents: Head long, flattened above, depressed in front; frontal long and narrow, narrower behind, excavated laterally; eye large, seven superior labials, the eye resting on the third and fourth; nostril between two plates; a more or less quadrangular loral; one large ant-orbitar, very narrow below, broad above, appearing upon the top of the head, between the prefrontal and supraorbitar; a small supplementary plate beneath it; two post-oculars; two rows of plates upon each temple between the occipital and superior labials; scales perfectly smooth, 17 rows near the middle of the body; inferior lateral rows the largest. Total length 1 foot 7½ lines; length of head 6 lines; greatest breadth 3; length of tail 3 inches.

Coloration. Head above brown, occipital and frontal plates marked with yellow; chin, throat and superior labials yellow, the posterior edges of the latter black; a red and ash brown circular spot immediately behind the occipital plates; 54 well marked transverse reddish brown blotches upon the back, not reaching to the tail, becoming indistinct in a space of 2¼ inches; the lateral extremities of the transverse blotches are separated from the abdominal scutes by four and a half rows of scales; sides covered all over with brown spots; a black spot near the exterior extremity of each abdominal scute, at its posterior margin, and one or more smaller near the middle, upon the anterior part of the abdomen; rest of abdominal surface and of under part of tail yellow, in the latter region almost white. Ab. scut. 171; one bifid præanal; 80 subcaud.

Gen. Remarks. The colors of this animal are so different that it might be readily mistaken for a distinct species. The Col. vernalis of Dekay has been taken for the young of the Constrictor, which hardly differs more in color from the adult than does Col. vernalis, but Col. vernalis is no doubt the adult age, and appears to belong to a different genus, viz., Herpetodryas.

Herpetodryas vernalis.

Syn. Col. vernalis, Dekay Col. vernalis, Holbrook, N. Am. Herpet. vol. 3, p. 79. Chlorosoma vernalis, Baird and Girard, Cat. N. Am. Serp. p. 108.

Two specimens. These do not differ from the other well known individuals. This serpent has a wide range, being found in New York, Maine, Pennsylvania, Wisconsin, Massachusetts, (Baird & Girard,) Connecticut, (Holb.) We have one specimen from Rhode Island presented by Mr. S. Powell. Wagler gives as the type of his genus Chlorosoma the Coluber viridissimus of Linnæus, (habitat Surinam,) which is a serpent about three feet in length, the Col. vernalis a little more than one. The two serpents belong to different families, the one being an Isodontian, according to Duméril and Bibron's arrangement, having the teeth smooth, alike, equally spaced, and the head larger than the neck, and is innocuous, the other belonging to the suborder of Opistoglyphes, having one or more posterior teeth longer and channelled, and is venomous. (Fam. Dipsadiens.) The Col. viridissimus of Linnæus (Chlorosoma viridissimum, Wagler,) belongs to the genus Dryophylax of Duméril and Bibron, characterized as having the "head conical, rather long, but little distinct from the trunk, in which the inferior region is separated from the flanks by a more or less salient line which the gastrostega form toward their extremities; tail usually long, tapering and rather slender; eyes of the ordinary size, pupil round, subcaudal; scutes bifid.' (Tome vii. p. 1103.) Duméril and Bibron state that they do not retain the generic name of Chlorosoma of Wagler, he not having characterized it with sufficient precision. In Dryophylax viridissimus the eye rests on the fourth and fifth superior labials, (third and fourth in vernalis,) there is but one anterior orbitar, (two in vernalis,) and there is no loral, the posterior frontals passing down alongside of the head to join the superior labials. There is but one temporal plate, (three in vernalis,) and there are eight superior labials, (seven in vernalis ;) tail 9 inches 8 lines in viridissimus, 3 inches 4 lines in vernalis.

Sub-Gen. ELAPHIS, Aldrovandi.

Char. "Head usually but little distinct from the body, and for the most part slightly conical, with a snout inclined a little downward ; trunk almost always cylindrical ; sides of the abdomen but little angular ; scales of the trunk strongly or feebly carinated."—D. et B.

Elaphis Alleghaniensis.

Syn. Scotophis Alleghaniensis, B. & G.

Two specimens. The coloration of these corresponds very well with the descriptions of Coluber Alleghaniensis by Prof. Holbrook, of Scotophis Alleghaniensis, by Baird and Girard, except that the posterior part of the abdomen and under part of tail is not uniformly slate black, being tinged to a certain extent with yellow ; the number of superior marginal labial plates in these specimens is eight, the seventh the largest ; the two inferior rows only appear to be smooth, except upon the neck, (according to Holbrook four, and Baird and Girard seven ;) near the occiput the scales are perfectly smooth. Total length 3 feet 8¼ inches, (Fr.;) of tail 5¾ inches ; of another 3 feet 6¼ ; of tail 5½. Abdom. scut. 221 in one ; 1 bifid præanal ; 66 subcaudal ; in the other, ab. scut. 227 ; subcaudal 176. Circumference of first specimen at its middle 3 inches 7 lines ; of second 2 inches 4 lines. Subcaudal scutes larger in the larger specimen.

The genus Elaphis appears to be very well characterized, and comprehends, according to Duméril and Bibron, thirteen species distributed in various parts of the world—Montevideo, (pleurostictus,) borders of the Caspian, Persia, S. Europe, Japan, (virgatus,) N. America, islands south of Japan, (conspicillatus.) It is one of the very few genera of serpents common to Europe and America.

The species inhabiting the United States are Elaphis Alleghaniensis, guttatus, quadrivittatus and vulpinus; three others have been described by Duméril and Bibron, viz., E. spiloides, rubriceps and Holbrookii; and Profs. Baird and Girard describe also three, viz., Scotophis Lindheimerii, confinis, lætus; the only specimens of these we have at present in our collection beside the three first enumerated, are two of vulpinus, presented by Dr. Gavin Watson, from the neighborhood of Buffalo, New York, which are readily determined from the description of Baird and Girard, and which undoubtedly belong to the genus Elaphis, which, according to Duméril and Bibron, was established by Aldrovandi in 1640 for the quadri-radiatus of Gmelin, (Elaphis [cervone.) Elaphis Holbrookii is represented as without spots or bands upon the flanks.

The geographical range of Alleghaniensis, according to Prof. Holbrook, is the Blue Ridge, Virginia, Highlands of the Hudson, N. Y., and Mountains of Carolina, and according to Profs. Baird and Girard, Carlisle, Penna., Creek boundary, (Hallowell.)

ABLABES, D. & B.

Char.—"Colubriform serpents with a moderate head, generally somewhat distinct from the trunk, which is almost cylindrical; abdomen separated from the flanks by an angle but little salient, the scuta being scarcely elevated upon the sides; snout short, smooth and rounded; eyes rather small; tail of moderate length, somewhat tapering; scales of the trunk rhomboidal, for the most part short and without carinæ."—D. & B.

ABLABES TRIANGULUM. Var. CALLIGASTER.

Among the collection of reptiles presented by Dr. Hammond, are three snakes resembling the Coluber eximius of Dekay, but which differ in the markings about the head, in the general color, but more especially in the number of scales, there being but twenty-one rows in eximius, and from twenty to twenty-seven, (20 towards the tail and 25 upon the neck,) in one of these specimens; 25 in the others. The blotches upon the back, of which there are fifty, are more narrow than in that species, their external margins being separated from the abdominal scutes by seven rows of scales; the blotches are from three to five lines in length by eight in breadth; there are eighteen transverse spots upon the tail; two rows of lateral spots, the superior much larger than the inferior; the head is long, the frontal (vertical) plate longer than broad, the gape of the mouth extensive, the eye resting on the 4th and 5th superior labials in advance of the middle of the gape; scales perfectly smooth, more narrow and elongate than in eximius; 210 abdom. scut. 1 bifid præanal; 65 subcaudal; total length 2 feet 7 inches, (Fr.); of tail 5 inches 3 lines; another 2 feet 6¼ inches, and a third, 2 feet 8½ inches in length; in another 206 ab. scut.; a single præanal, 243 subcaud.; and in a third 198 abdom. scut. one single præanal and 41 subcaudal. These numbers agree sufficiently well with those of calligaster, as given by Harlan, viz. abdom. 213, caudal 52, (Med. & Phys. Research. p. 122.) whereas in eximius the abdominal plates, according to Harlan, run as high as 250 in number. Dr. Holbrook, however, gives 198 abdom., 1 præanal, 247 subcaudal, and Harlan states that in a living one which he observed, there were only 33 pair of caudal scutes. In Professor Baird and Girard's specimens of eximius, the number of abdominal plates varied from 200 to 214, and the abdominal from 49 to 55; the total length from 2 feet 4½ inches to 3 feet 10 inches, corresponding in this respect with Harlan's description of calligaster, which he says was about 4 feet long; so that there does not appear to be any material difference between the eximius of Dekay, and the specimens under consideration, either in the number of plates or in the length of the animal, but chiefly, as before stated, in the greater number of rows of scales of the latter; in all Profs. Baird and Girard's specimens of eximius, and in those of the Academy, the number being but 21. There can be little doubt, we think, that the specimens from Kansas are identical with the calligaster of Say, for Dr. Harlan, who appears to have first described those in the Philadelphia Museum, is of opinion that they may be a variety of eximius. Prof. Holbrook, who examined the originals of Say, states that they are the same, differing only in the greater number of plates in calligaster; but it is quite possible that he may not have counted the rows of scales. In all of the Kansas specimens, the coloration of the head and neck is different from that usually observed in eximius, and in two of them entirely so, there being in each two dark brown longitudinal blotches upon the temples, and on the neck, one on each side, and another about half the length of these between them, the triangular spots described by Lacepéde, being altogether absent. Ground color of head above brown, with no white stripes or bands, but a band of dark brown extending across the posterior margin of the pre-frontal plates. The ground color of the body and tail above is brown, the transverse spots or blotches much darker, each with a slight margin of a lighter brown than the ground color; the blotches are more narrow than in eximius, occupying from two to three rows of scales only in length, and from eight to ten in breadth; 45 in one, (the 45th opposite the anus,) upon the body; 18 upon the tail; 47 in another; and 18 upon the tail, and in a third 49; the 49th opposite the anus, and 14 upon the tail; blotches upon tail quite narrow, minutely black spotted and maculated, as well as interspaces and sides; color of abdomen as in eximius. Notwithstanding the great resemblance in the number of abdominal and subcaudal plates, and general appearance, we are inclined to consider the above specimens as belonging to a variety distinct from eximius, being, in fact, the calligaster of Say. We have recently received from Kimball's Museum, Boston, (whither the originals of Say had been transferred,) through Dr. Holbrook, one of the originals of Say's calligaster; the tail is broken off with a small portion of the body, but it corresponds with Dr. Harlan's description, and Prof. Holbrook's notice of it, the scales, of which there are twenty-five rows, being perfectly smooth. We therefore have a confirmation of the statement of Prof. Holbrook, of the specific identity of eximius and calligaster, and of the opinion of Duméril and Bibron, who place it, as well as clericus, among the synonyms of Ablabes triangulum, and I am happy to agree with those learned and very eminent Herpetologists.

The following may be given as the characters of Albabes triangulum, var. calligaster.

Char.—Head rather long; seven superior labials; body of moderate thickness, with from 25 to 27 rows of *smooth* scales; tail about 1-6th of the total length; color *brown* above, with from 45 to 49 rows of black transverse narrow blotches upon back and 14 to 18 upon tail; two lateral rows of smaller blotches upon sides; under part of body beautifully tesselated with black and white; abdom. scut. 198, 210, subcaudal 41, 65; length 2 feet 6¼, 2 feet 8½ and 3 feet 10 inches, (Fr.)

Geographical Distribution.—Kansas, Missouri.

Gen. Remarks.—Duméril and Bibron state that the name triangulum has precedence over that of eximius of Dekay, having been applied to the same species by Count Lacepêde, in his Hist. des Serpens, published in 1789, Tome, 2, p. 331. The description of Lacepéde is very precise, but it appears to us that it applies, not to the eximius as usually described, but rather to the clericus of Baird and Girard. The description of Lacepéde is as follows: "Nous nommons ainsi (triangle,) cette espece de couleuvre parce qu'on voit sur le sommet de la téte, qui est garni de neuf grandes ecailles une tache triangulaire chargé dans le milieu d'une autre tache triangulaire plus petite et d'une couleur beaucoup plus claire ou quelquefois plus fonceé; des ecailles unies et en lozange couvrent le, dessus du corps, qui est blanchatre avec des taches rousses irregulieres et bordees de noir; on, voit un rang de petites taches de chaque coté du dos et une tache noire allongee, et placeé obliquement derriere chaque œil." The length of Count Lacepédes specimen was 2 feet 7 inches 2 lines, tail 3 inches. Abdom. sc. 213, subcaud. 48 pair. There can be no doubt therefore of the priority of Lacepéde's description which is very accurate, but inasmuch as but one row of lateral spots is mentioned, there is some doubt whether it applies to eximius or to the serpent described by Baird and Girard, having only *one* row of lateral spots, (Ophibolus clericus.) We have a number of specimens with but a single row of lateral spots with transverse blotches much broader, and reaching to the abdominal rows of scales, but in which the size and position of the eyes do not appear to form constant characters. The blotches in a recent specimen are of a bright red, a very inappropriate color for a clercius, according to our present notions. The specimens marked eximius are all immature, with one exception, but all have the double row of spots.

ABLABES TRIANGULUM, var. CLERICUS]

Char.—A large triangular red blotch upon posterior part of head and neck, with a smaller one of a lighter color in the middle ; a black band from the eye to the angle of the mouth; 27 rows of quadrate blotches upon the back, of a bright red color bordered with black, the 27th opposite the anus; eight upon the tail; the blotches upon the back separated from the abdominal scuta by a row and one half of scales, and sometimes reaching as far as the last row; a single row of much smaller lateral spots of a red color bordered with black, intermediate as respects the position of the larger ones, occupying the last or abdominal row of scales, and a portion of the abdominal plates; 21 rows of scales; abdom. scut. 196, præanal single, subcaud. 44; circumference 2 inches 7 lines. Total length 2 feet 7½ inches, of tail 3 inches 11 lines.

It will be observed that these characters differ very little from those given by Count Lacepéde.

Habitat.—Clark county, Virginia, Mississippi and neighborhood of Haddonfield, New Jersey.

For description of var. eximius,* see Dr. Holbrook's work, N. American Herpet., vol. 3, p. 69.

The geographical range of eximius, according to Prof. Holbrook, is Maine, Rhode Island, Massachusetts, Pennsylvania, Maryland, Illinois, and high up the Missouri, (calligaster, Say,) and New York, (Prof. Baird.)

Gen. TANTILLA, B. and G.

Among the Ophidians of Dr. Hammond's collection is a very small Calamarian, resembling in its general appearance Carphophis amæna, Dum. and Bib., but much more slender and of a lighter brown color. The arrangement of the plates upon the head, however, is quite different, and I cannot find a genus into which to place it, among those of the Calamarians characterized by Dum. and Bibron, in the Catalogue of North American Serpents of Baird and Girard, unless it be Tantilla, or of the snakes in the British Museum, by Mr. Gray. The following are its characters :—Head small, slightly rounded above, depressed in front; snout smooth, rounded, nine plates upon the top of the head, the two anterior frontals much smaller than the posterior, which pass down on each side of the head between the posterior nasal and the anterior orbitar plates, and *are in contact with the superior labials;* nostrils between two plates, situated in the anterior of the two for the most part, at its posterior edge; vertical or frontal plate short and broad, hexagonal, the posterior angle much more acute than the anterior; occipitals rather long, pentagonal; the supraciliaries do not project over the eye ; but two temporal plates ; no loral, the posterior frontal taking the place of it; one ant-orbitar and one post-orbitar, the latter somewhat larger than the former ; six superior labials, the eye resting on the third and fourth, the fourth, fifth and sixth much larger than the preceding ones ; eye small; six inferior labials, the fourth the largest; body slender, somewhat thicker near the middle, with 15 rows of smooth and rhomboidal scales; five longitudinal rows of smooth rhomboidal scales, four scales in each beneath the neck, between the posterior geneial and front abdominal scutes; three inferior lateral rows of scales larger than the others; *color* light brown or olive above, lighter beneath, approaching to white, a narrow dark colored line along the middle of the back, commencing at the occiput; head of a darker brown than the rest of body; ab. scut. 130; one single præanal and 42 bifid sub-caud.

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*Dr. Dekay says of the eximius, "it is rare to find them exceeding 4 feet; the more usual length is about two."

Dimensions. Length of head 3 lines; greatest breadth 2; length of neck and body 5 inches; of tail 1 inch 6½ lines; total length 6 inches 9½ lines.

Habitat. Kansas.

Gen. Remarks. This serpent corresponds very closely with Tantilla of Baird and Girard, and may be their Tantilla gracilis, which, however, wants the vertebral line. In their species the posterior frontal do not come in contact with the labials and the vertical plate is represented as anteriorly acute. The number of rows of smooth scales, of orbitar plates and abdominal and sub-caudal scutes agree very well, there being 129 of the former and 45 of the latter. We do not find, however, that the inferior row of scales is considerably broader than the others, if indeed so broad as the row above it.

Habitat. Indianola.

CORONELLA LAURENTI, 1768.

Char. "Serpents with posterior superior maxillary teeth longer and on the same line with the others, without interval; trunk elongated; scales smooth; snout rounded and but little elongated." D. & B.

CORONELLA DOLIATA, var.

There is one specimen of Coronella doliata, one foot three inches in length; and two specimens resembling the Calamaria elapsoidea of Holbrook, which appear to be the young of the former. They do not belong to the genus Calamaria, which has but one nasal plate and no frenal, elapsoidea having no frenal and the nostril between two plates. We have also in the collection of the Academy a specimen marked elapsoidea from the Creek boundary, which, however, has a loral plate and is no doubt a young coronella. The following notes may characterize sufficiently these specimens: Cor. doliata, adult. Head resembling that of Elaps; vertical (frontal) plate a little longer than broad; two lines in breadth; occipitals short; pre-frontals (posterior frontals) much larger than the internasals (ant. frontals); nostrils between two plates; a small and narrow frenal; one anterior and two posterior oculars, seven superior labials, the eye resting on the third and fourth; 21 rows of smooth, quadrangular, elongated scales; tail short, 3 inches 3 lines in length. Abdom. scut. 200; one single præanal; 52 subcaudal.

Coloration. Twenty-nine red spots upon the back, bordered with black; interspaces between the black bands white; the red spots are for the most part more narrow in the middle, more extended laterally; the black bands occasionally almost touching each other; the black bands coalesce with black, sub-quadrate spots upon the abdomen, having other black spots intermediate; a black, transverse band across the occipital plates; a few black spots upon the upper labials; ground colour below light yellow; the black bands upon the back are from two to two and a half lines measured longitudinally, being about thrice the dimensions of those of a specimen from Delaware. The red spots or transverse bands occupy from two to two and a half rows of scales, as do also the black bands upon the margins. In the specimen from Delaware the red spots occupy a much greater space, the first comprising 11 rows of scales, but 6 in the Kansas specimen; the second six, in the Kansas specimen three, and the black margins are also much more narrow, occupying 1½ rows of scales; the black tesselated markings upon the abdomen also differ, and the alternate black spots are not seen except towards the tail; the snout is more acute, and the number of rows of scales is less, viz.: 19. Ab. scuta 186; one single præanal; and 42 sub-caudal.

In the specimens of Ophibolus gracilis, B. and G., the anterior black rings so extend as to cover the whole head above, except the very tips; in other specimens the black rings run into each other. In another there were only 21 pairs of rings. They are from Arkansas and Louisiana ; number of rows of scales not mentioned, (Cat. N. Am. Reptiles in Smith. Inst. p. 91). Ophibolus is not characterized with sufficient precision to be retained, including as it does two genera, Ablabes and Coronella, belonging to different families, the one (Ablabes) an Isodontian, with teeth of equal length, the other (Coronella) a syncraterian, (posterior teeth in the latter much larger and stronger than those which precede them, a well marked character in our specimens). The one from Delaware corresponds very well with Prof. Holbrook's Coronella doliata, though the rings are not so generally confluent with the spots upon the abdomen.

In one of the younger specimens, one 9½ the other 7¾ inches in length, the red blotches are much wider apart, the black rings more narrow in proportion and the white interspaces wider than in the other. The black rings in rows, in these specimens entirely surround the abdomen. (We need for the thorough elucidation of the natural history of the Coronellians resembling each other so much in color, a greater number of specimens and of all ages. Our friends would confer a favor upon science would they take care, as has been the case to a great extent in the Kansas collection, to send us numerous specimens of the same species.)

Gen. Remarks. The coloration of this serpent differs very considerably from that of the figure of Ophibolus gentilis, B. and G., in the exploration of the Red river of Louisiana, by Capt. Randolph B. Marcy and George B. McClellan. The blotches in that figure are much more extended, and the black marginal rings much wider apart. In one of these specimens there were 25 instead of 29 pairs of black rings, the red portion occupying a much greater space ; but in another there were 28; dorsal row of scales 21 ; Ab. scut. 198 ; sub-caud. 45 ; total length 20 inches. These black ringed Coronellians will probably, when a sufficient number of specimens shall have been procured from different parts of the Union to determine the question, turn out to be for the most part varieties of one and the same species.

Gen. TROPIDONOTUS, Kuhl.

The genus Tropidonotus belongs to the family of Syncraterians of Dum. and Bibron, in which the teeth are in a continuous row without interval, and the posterior longer than the others ; the scales in this genus, as its name indicates, are always carinated, more especially those upon the flanks. The tail is of moderate length. Three species in the collection belong to this genus, viz. : Tropidonotus parictalis of Say, of which there are three fine specimens ; a much larger one, (Trop. obliquus,) and Trop. ordinatus.

TROPIDONOTUS PARIETALIS, Say.

The collection made by Dr. Hammond includes two specimens of Tropidonotus parietalis. Both these serpents correspond with the short but clear description of Say. The red spots on the sides are very apparent; one of the specimens is quite stout, the circumference being 3¼ inches at the middle ; 147 abdom. scut. a single præanal, (tail mutilated) 19 rows of scales, the inferior row smooth, the middle stripe broad, occupying one and the half of each adjoining row of scales. In the smaller speeimen, Ab. sc. 155., and 83 subcaudal ; tail of moderate length, rather long and tapering.

Habitat. Between San Antonio, El Paso, Missouri (Say); Kansas, California, (Dr. Heermann); Rio San Pedro, Texas, (Woodhouse.)

There is but one specimen of Tropidonotus ordinatus (young) with the lateral stripes very distinct, three rows of alternate black spots ; extremities of abdominal scales black spotted anteriorly ; occipital plates bi-punctate ; 21 rows of scales all carinated, inferior row largest ; ab. sc. 167, a single prænal, 78 subcaudal. Total length, 1 foot 1 inch 7 lines, of tail 3¼ inches.

TROPIDONOTUS OBLIQUUS, nob.

Char. Head long, flattened above, nostril between two plates, a loral, other plates normal, 8 superior labials, the eye resting on the 4th and 5th, 6th and 7th the largest; immediately behind the middle post-ocular one temporal plate between the occipital and the superior labials; 23 rows of carinated scales, the inferior row but slightly carinated and larger than the others; scales strongly emarginate posteriorly, the carinæ running the whole length of the scale; scales long and rather narrow upon the back, broader towards the abdomen. 140 ab. sc. 1 bifid præanal, and 69 sub caudal; tail rather long, tapering to a point; body robust, size about that of Tr. sipedon.

Coloration. Greyish above, with large transverse and more or less oblique blotches of the same color bordered with black, extending as far as the abdominal scales; they are quite broad, occupying about five rows of scales, and have very irregular margins; the interspaces between them are comparatively very narrow, from a scale to nearly two in width; 32 of these oblique blotches may be counted, the 32d opposite the anus; 18 or 19 transverse brownish bands upon the tail; under surface resembling very much that of sipedon, the ground color yellow, which predominates greatly at the anterior part; throat and under jaws quite yellow, the posterior margins of the inferior labials bordered with brown.

Dimensions. Length of head 1 inch 5 lines; greatest breadth 9; length of body 2 feet, 1 inch, 7 lines; of tail 8 inches; total length, 2 feet, 10 inches, 1 line; circumference 3 inches, 1 line.

Gen. Remarks.—This serpent differs from Trop. rhombifer and transversus. It resembles very much a specimen in the possession of Dr. Holbrook from Chicago, sent to him some time ago by Prof. Kirtland, and which he has kindly permitted me to examine. They both are of the same length, have similar markings, and the same number of rows of scales. It may be a variety of Trop. sipedon.

HETERODON NASICUS.

There are three specimens of Heterodon nasicus B. and G., in very excellent preservation. These Heterodons are remarkable for their prominent rostral plate and bulging cheeks, giving them a physiognomy, to use the expression of Prof. Schlegel, quite different from that of our ordinary Heterodons. The abdomen and under part of tail is almost entirely black. In two of the specimens the vertical (frontal) plate is as broad as long, in one broader by about half a line; the shape of the vertical plate differs entirely from that of simus, but much more from that of niger and platyrhynos. In a specimen of simus there are eight small plates between the frontal and rostral, and the anterior nasal and supero-nasals; in nasicus fourteen, in platyrhynos and niger there is but one, (the azygos) immediately behind the rostral. In a specimen of niger there is but one loral plate, the posterior supra-nasal (posterior frontal) passing down upon the side to take the place of the upper one in simus; and in platyrhynos two. The entire length of the largest of these specimens of nasicus is one foot, three inches, tail 2 inches 7 lines, circumference 1 inch 7 lines. It appears to be a smaller species than simus, and much smaller than platyrhynos and niger. Prof. Baird and Girard, however, give over two feet as the dimensions of a specimen from Sonora. Ab. sc. 137, 1 bifid præanal, 43 sub-caudal. In 2d. 137, ab. sc. sub-caud. 43. In 3d, 137, ab. sc. sub-caud. 44.

Habitat. Rio Grande, Red River, Arkansas, Fort Webster, Sonora.

Gen. remarks The figure in Capt. Marcy's report does not accurately represent this animal; the bulging of the cheeks, a prominent characteristic, is not sufficiently shown, and the nostril is in a single plate, which is not the case.

VENENOSI.

TRIGONOCEPHALUS CONTORTRIX.

There are four specimens of Trigonocephalus contortrix, which present nothing very peculiar. In one of them the black color predominates greatly upon the abdomen; dorsal rows of scales near the middle in all 23. In a fine specimen from Pottsville, Pa., presented by Mr. C. T. Hughes, the dorsal rows are but 21, ab. sc. 146 ; a single præanal, 38 sub-caud. followed by 7 bifid near the posterior extremity of the tail; in the Pottsville specimen, 148 ab. sc. 1 bifid near the anus, 21 single and 20 bifid plates at the end of the tail. In a 2d 142, ab. sc. 1 bifid near the anus, 25 single and 21 bifid. In all the specimens the sub-caudal scales are single anteriorly and bifid posteriorly. The Trigonocephali, like the Crotali, have a deep pit between the eye and the nostril, in which they differ from the Vipers. They have plates upon the head, unlike Bothrops and several other genera, and are destitute of rattles. This serpent was first described by Linnæus under the name Boa contortrix ; and afterwards by Palisot de Beauvois, who calls it Angistrodon mokeson. It has been placed in no less than five different genera, viz.: Boa, Angistrodon, Cenchris, Scytalus, and Trigonocephalus, with three different specific names.

Habitat. This serpent has a very wide geographical range. From N. England to Florida, and the shores of the Atlantic to Alleghanies, (Holbrook) Ohio, Penn., S. Carolina, Louisiana, Texas, (B. and G.)

CROTALUS CONFLUENTUS.

There is one specimen of Crotalus, which corresponds sufficiently well with Say's description of Crotalus confluentus. The spots are more crowded together anteriorly than in the specimen described in Sitgreave's report ; the interspaces between the first fourteen being much more indistinct than between those which follow, especially the first seven which present the appearance of narrow white transverse bands ; they are confluent only to a slight extent. Total length including rattle, 1 foot 8¼ inches ; of tail including rattle 1 inch 8 lines ; of rattle 9 lines ; (4 rattles and terminal appendage) of head 1 inch, breadth ¾ ; 25 or 27 rows of scales. 178 ab. sc., a single præanal, 1 bifid, 14 single and 2 bifid sub-caudal, the last near the rattle ; circumference 2 inches. 40 brown subquadrate spots, more or less marginated, may be counted upon the back and four or five upon the tail; the last nine or ten have more the appearance of bars than regular blotches. A much larger Crotalus than the above is found in California, of which an excellent figure is given in Capt. Marcy's Exploration of Red River, pl. 1, under the name of Crotalus confluentus. We have several in the collection of the Academy, presented by Dr. Heermann, of which a notice will be given in the forthcoming volume of the Pacific Railroad report, under the direction of Capt. Williamson. These are of a yellowish color beneath, with brownish maculations ; the subquadrate spots upon the back a deep brown bordered with orange. One of these specimens measures more than 3 feet in length ; 23 rows of scales. The predominating color in the specimens, except that of the dorsal subquadrate blotches, is sulphur yellow. The name of Crotalus Lecontii might perhaps with propriety be given to this species from California, and that of confluentus be retained for the smaller crotalus with quadrate blotches, from Missouri and Kansas. The serpent figured in the Exploration of Red River, has more the general appearance of the former, and the shape of the rattle corresponds, this in confluentus tapering to a point ; and not quadrangular as in the larger animal.

RANIDÆ.

There is in the collection a specimen of Rana halecina, which does not differ in any important particular from the R. halecina found in the neighborhood of Philadelphia, unless it be that in the latter the internal nares appear to be larger, and the tongue more narrow. The vocal vesicles are quite distinct, the pores upon the orbit conglomerated and very apparent ; others are observed upon the neck and anterior part of the back, and a band extends along the upper margin of each flank, from the posterior angle of the eye to near the thigh ; Duméril and Bibron state, that it is with some doubt that they separate this species (the halecina,) from palustris, but admit that they are, and they are no doubt distinct. They are both very common in the neighborhood of Philadelphia. The Rana halecina has vocal vesicles, the palustris has none ; the spots as Duméril and Bibron observe, are subquadrate in palustris, but round in halecina; the thighs are very differently marked in the two species, and the tympanum, as stated by the authors above mentioned, is smaller in palustris, but it appears to us that the snout is more acute in the latter than in halecina, being the reverse of the diagnosis as given by them.

RANA PIPIENS.

There is but one specimen of Rana pipiens in the collection, and that is about half grown. It does not differ materially from one of the same dimensions from Absecom, N. J., except in the size of the tympanum, which in the Kansas specimen is not more than 2½ lines in diameter; whereas in the one found at Absecom it is 6 lines, being the same as in a very large and full grown specimen from Buffalo, New York. The general color is olive above, minutely and sparsely spotted with black, with very indistinct bars of a deeper olive upon the posterior extremities. The mottlings below resemble each other, except that in the Absecom specimen they are of a chocolate color, and the color of the abdomen less clouded; they both appear to be females. The difference in the size of the tympanum is certainly remarkable, but without a greater number of specimens, we are unwilling, on that account, to give it a new specific name. Besides the above, there are several other smaller specimens of the same olive color above, the rows upon the posterior extremities of a darker color, the body covered with minute black spots, in the youngest resembling the R. conspersa of Major Le Conte, which is, probably, the young of R. pipiens. According to Major Le Conte, conspersa wants the ridge upon the tympanum. Under part mottled as in the larger individual.

There is a single specimen of a very small Batrachian resembling the Acris gryllus, grey spotted above with the triangular spots upon the head; thighs and eyes obliquely spotted with brown; under parts white; length from snout to posterior extremity of body 6 lines; length of anterior extremities 3 lines; of posterior 9½.

BUFONIDÆ.

BUFO AMERICANUS.

There are in the collection of Dr. Hammond, two very large toads, larger than any specimens of Bufo americanus that I have seen. They measure 3 inches 11 lines in length, (from snout to vent,) the dimensions of the Bufo americanus, as given by Prof. Holbrook, being but 2½ inches. The longitudinal ridges upon the head are as in Americanus, and there is a narrow vertebral line running from the extremity of the snout to near the posterior extremity of the body; the general color is dusky above mingled with olive, with a few subround black spots and linear maculations; the black colored maculations are more distinct upon the sides; under part yellow, mingled with orange posteriorly; the warts upon the sides of the body above and upon the posterior extremities are remarkable for their large size.

The Bufo punctatus of Profs. Baird and Girard appears to be the young of this species; they are of an ash grey with subround spots, and irregular markings of black, containing one or more prominent red colored points or tubercles. Under parts white, with a tinge of blue upon the abdomen, except posteriorly, the under surface of the posterior extremities of a yellow color. I cannot make out that this toad differs essentially from Bufo americanus, and in this my friend Major Le Conte agrees, who also examined the specimen.

The most striking difference between this species and the Americanus, consists in the much greater breadth of the tongue, and its greater comparative evertility; in two specimens of equal size, the tongue in the Kansas specimen is six lines in breadth, in Bufo Americanus but three. In the largest specimen the tongue measures 7 lines in breadth, and is somewhat less evertile then in the smaller specimen. This species is very different from Bufo halophila, B. & G., inhabiting California; the latter is much more warty, the warts being very numerous and much developed along the middle of the back; the markings beneath are also different, halophila being largely maculated beneath.

ENGYSTOMA OLIVACEUM, nob.

There is a single specimen of Engystoma, one inch one line in length by seven lines in breadth; the anterior extremities 6; the posterior 1 inch 10 lines in length. The general color above is olive, with dark colored spots posteriorly; these are observed in considerable number upon the posterior part of the body and upper part of the thighs; a few also are seen over the shoulders; the sides are obscurely marbled with brown; under surface yellow, immaculate; a well marked fold passes across the head behind the eyes, extending down alongside of the head.

This specimen is larger than any of those in the collection of the Academy, and the coloration is quite different from that of Dr. Holbrook's figure (N. Am. Herpet. vol. v. pl. vi.,) and the specimens from Georgia in the collection presented by Maj. Le Conte. These are all more or less mottled with brown beneath and brown or chestnut colored above.

Dimensions. As above, length of tarsus and toes 9 lines; of leg 4 lines; of thigh 4; of arm 2, of forearm 2.

Gen. Remarks. Duméril and Bibron describe five species of Engystoma—two from N. America, (carolinense and rugosum,) two from S. America, (ovale and microps,) and one from Malabar, (ornatum.)

Habitat. According to Dr. Holbrook, Engystoma Carolinense has never been found north of Charleston, its range extending westward to the lower Mississippi.

URODELA.

AMBYSTOMIDÆ.

AMBYSTOMA LURIDUM, var. FASCIATUM.

There is but one specimen of Urodela, viz., an Ambystoma. This is the same animal apparently figured in Duméril and Bibron's work, pl. 105, under the name Ambystome abandes, (varieté,) but it differs entirely from Ambystoma fasciatum, (opacum,) not only in coloring but in the arrangement of the teeth; these in fasciatum are placed in three distinct groups, whereas in the present specimen they are in a continuous series, forming a very obtuse angle, the lateral prolongations passing behind the internal nares and terminating in a line with their external margin, presenting the same arrangement as in Ambystoma *luridum*, of which it is probably a variety, having nothing to distinguish it from that species but the coloration. Duméril and Bibron state that their specimen was received from the neighborhood of New Orleans.

One cannot but remark, in studying the collection of reptiles above noticed, the great difference in the geographical range of the genera and species composing it. The Emys does not exist with us, neither does a single one of the genera of the lizards, unless it be Cnemidophorus. Of the innocuous serpents four are common to Pennsylvania and Kansas, viz., Elaphis Alleghaniensis, Ablabes triangulum, Tropidonotus ordinatus and Herpetodryas vernalis. The others, viz., Tropidonotus parietalis, unless it be considered a climatal variety of sitalis, Tropidonotus obliquus, Microps lineatus, Coryphodon flaviventris, Coronella doliata, Tantilla gracilis and Heterodon nasicus are unknown to us. The *genera* of innocuous serpents in the collection common to Pennsylvania and Kansas, are Elaphis, Ablabes, Tropidonotus, Coryphodon and Heterodon. Of the venomous serpents, Trigonocephalus contortrix, which is one of the most widely diffused of our serpents exists in both regions, but Crotalus confluentus is found only in the far west and south-western portions of North America. Of the Ranidæ, R. halecina and pipiens are common to both, and of the Bufonidæ B. Americanus; but we have no Engystoma, and among the Urodela no Ambystoma, with an arrangement of teeth and system of coloration in all respects similar to the specimen in the collection, which appears to us, as above mentioned, to be closely allied to luridum.

We have not at present the materials for a complete representation of the Herpetological fauna of America either North or South, but these will hereafter no doubt present some very curious results, when compared with the fauna of the West India Islands, and other parts of the globe. In order, however, to arrive at the truth in a matter so important, it will be necessary to determine with the utmost precision the characters both of the genera and species, and this cannot be done without a knowledge of the anatomy, as well as of the external forms.

Descriptions and Notes on Birds in the Collection of the Academy of Natural Sciences of Philadelphia and in the National Museum, Washington.

By John Cassin.

1. Buteo Cooperi, nobis.

About the size of *Buteo borealis.* Bill strong, edges of upper mandible lobed, wings long, quills wide, fourth quill longest, tail moderate, legs rather long, tarsi feathered in front slightly below the joint, behind and remainder in front naked, with about 13 transverse scales in front and 11 behind.

Total length (skin) 21½ inches, wing 15, tail 9 inches.

Tail white at base, external feathers with their outer webs cinereous and their inner webs white mottled with cinereous, other feathers of the tail mottled and striped *longitudinally* with white, bright rufous, dark brown and cinereous, darker on the outer webs. A subterminal transverse band of dark brown, tip white.

Plumage of the head above white at base, tipped, and with longitudinal stripes of brownish black; back and rump brownish black, upper tail coverts white, transversely barred with dark brown and tinged with rufous, wing coverts and quills cinereous darker on outer webs of primaries and lighter on their exposed ends. Under parts white, with narrow stripes of dark brown, numerous on the neck, throat and flanks, (breast, abdomen and under tail coverts pure white,) a few of the same on the under wing coverts, tibiæ faintly tinged with yellowish. Bill dark bluish, tarsi yellow.

Obs. This is the young plumage, and the present specimen is the only one that I have ever seen. It is from California, and is in the collection made by Dr. J. G. Cooper, while attached to Lieut. Williamson's party that surveyed a route for a railroad to the Pacific Ocean.

This bird belongs to the same group as *Buteo eythronotus* of South America, and has nearly the same light cinereous color of the wings, quite different from any other North American species. I have named it in honor of Dr. Cooper, a talented and active young naturalist, the son of William Cooper, Esq., one of the most eminent of American Naturalists.

2. Eopsaltria cinerea, nobis.

Bill thick and rather long, distinctly notched near the end, wing rather long, first quill spurious, fourth slightly longest, tail moderate, tarsi and toes slender, feathers of the head above slightly lengthened.

Total length (of skin) 5 inches, wing 2¾, tail 2 inches.

Entire upper parts cinereous, feathers on the head with faint lines of brown on the shafts. Quills dark ashy brown, edged externally with pale ashy, tail dark ashy brown, narrowly tipped with white. Throat and abdomen white, breast pale ashy, under wing coverts white. Obscure line from the bill to the eye, and ring around the latter, white, spot in front of the eye, dark ashy brown. Bill dark, base of lower mandible white, feet dark.

Hab. Moonda river, Western Africa. Discovered by Mr. P. B. DuChaillu.

Obs. This little bird is nearer the genus *Eopsaltria,* than any other that I can find at present, though perhaps not strictly. Two specimens in the collection of Mr. DuChaillu are all that I have seen. It is a plain little bird, having the general appearance of *Vireo* and *Eopsaltria.*

3. Sitta aculeata, nobis.

About the same size as *Sitta carolinensis* and much resembling it, but with the bill longer and much more slender. The colors of the upper parts are darker than in *S.. carolinensis*, and the white of the tail of less extent.

Hab. California. Specimen in Nat. Mus. Washington, and Mus. Acad., Philadelphia.

Obs. This is the western style of *Sitta*, nearly allied to the common species of the States on the Atlantic. It may very readily be distinguished by its long, slender and pointed bill, which is a constant and unvarying character. Numerous specimens are in the collections above referred to, and it appears to be a common bird of the western regions of North America.

4. Todiramphus varius, (Eyton,) Auctorum.

Halcyon varia, Eyton, Proc. Zool. Soc., London, 1839, p. 101.

Blyth Jour. As. Soc. Bengal, xv., p. 11.

Whatever may be the bird described by Mr. Eyton as above, it is quite certain that Mr. Blyth as cited, describes *Halcyon concreta*, Temm. Pl. Col. iv., pl. 346 The latter describes at length, and the species can readily be identified with Temminck's plate, even without specimens. We regard it as quite probable, too, that Mr. Eyton alludes to the same bird, and at present regard his name as a synonyme for *Halcyon concreta.*

This bird does not belong to the genus *Todiramphus.*

5. Columra iriditorques, nobis.

About the size of *Turtur eythrophrys.* Wing rather long, quills broad, second quill longest, tail rather short, feathers broad, legs short.

Total length (of skin, male) about 10½ inches, wing 6½, tail 4 inches. Female smaller.

Neck behind with a wide collar of cinnamon color, with golden violet and green metallic lustre. Entire head cinereous, light on the throat and in front, darker and with a green metallic lustre on the occiput, other upper parts very dark, nearly black with a tinge of cinereous, and on the back and rump with green and violet metallic lustre, especially next to the nuchal collar. Under parts vinaceous, under tail coverts light chestnut, under wing coverts dark cinereous. Two central tail feathers dark cinereous, others same color on their outer webs, and dark chestnut on their inner webs, and widely tipped with yellowish white. Legs yellow.

Hab. St. Paul's river and Moonda river, Western Africa. Dr. MacDowell's collection and Mr. DuChaillu's collection. Spec. in Mus. Acad. Philada.

Obs. This handsome species of Dove has been in the collection of the Academy for some years, having been collected by Dr. MacDowell, but I have never succeeded in finding a name for it. It is not given in the *Columbidæ* of the Prince Bonaparte's Conspectus Avium.

Several specimens are in Mr. DuChaillu's collections. This species does not intimately resemble any other known to me, and may be immediately recognized by its wide nuchal collar, the colors of which are very brilliant. The back and rump and some of the wing coverts have also brilliant metallic lustre.

6. Zapornia umbrina, nobis.

"Zapornia spilinota, Gould," Peale, Voy. Vincennes, Birds, p. 224.

About the size of *Z. spilonota*, Gould. Bill rather long, membrane of the nostril very large, wing rather long, third quill longest, tertiaries long, tail short, legs moderate, toes long.

Total length (skin) 5¾ inches, wing 3, tail 2 inches.

Entire upper parts reddish brown or snuff color, darkest on the rump, which color is continued on the sides below the lower edges of the wings. Under parts dark cinereous, lighter on the throat, under tail coverts brownish black with transverse stripes of white, under wing coverts brown edged with white, feet light colored, bill darker.

Hab. Feejee Islands. Specimens in the collection of the U. S. Exploring Expedition, (Vincennes and Peacock.)

Obs. This bird was given in Mr. Peale's volume on the Birds and Quadrupeds of Capt. Wilkes's Expedition, as *Zapornia spilonota*, Gould, but though very probably of the same genus, is distinct, and we have not found it described.

7. TACHYPETES PALMERSTONI, (Gmelin.)

Pelecanus Palmerstoni, Gm. Syst. Nat. i. p. 573, (1788.)

Obs. This is a species quite distinct from *T. aquila*, and is apparently exclusively an inhabitants of the Pacific Ocean. From that species the present bird may readily be distinguished by its much larger gular pouch, which in the living bird is of a red color. Its quills and tail feathers are much narrower and the latter is longer. So far as can be determined from preserved specimens, the two species are nearly of the same size, though the present bird is the more slender.

Numerous specimens are in the collection of the Exploring Expedition, (Vincennes and Peacock.)

Notices of Remains of Extinct Vertebrated Animals discovered by Professor E. Emmons.

By JOSEPH LEIDY, M. D.

CETACEA.

1. ORYCTEROCETUS CORNUTIDENS, Leidy.

O. quadratidens, Proc. A. N. S. VII, 378.

The genus was originally proposed on several long horn-like teeth, together with fragments of jaws found in the miocene deposit of Virginia. Prof. Emmons has also discovered a tooth, apparently of the same species, in the miocene deposite of North Carolina. The tooth bears a wonderful resemblance to the horn of a young ox. It is nearly 5 inches long in the curve and over an inch in diameter at base, which is hollowed into a deep conical cavity, as in the spermaceti whale.

SAURIA.

2. DREPANODON IMPAR, Leidy.

This species is founded on the crown of a tooth discovered by Prof. Emmons in the miocene deposit of Cape Fear, North Carolina.

The specimen, in form, bears a strong resemblance to the crown of the inferior canine tooth of a bear, but it has only one trenchant ridge, and this is situated postero-internally. The enamel is thin and smooth; the base of the crown is hollowed conically. Length of specimen 10 lines; breadth at base antero-posteriorly 7 lines, transversely 5 lines.

3. PLIOGONODON PRISCUS, Leidy.

Founded on two much mutilated specimens, consisting of the crowns of teeth, discovered by Professor Emmons in a miocene deposite of Cape Fear, in North Carolina.

Teeth elongated conical, nearly straight or only slightly curved inwardly, in section circular, with a pair of opposed carinæ on the inner side; surfaces divided into numerous narrow planes, with a few vertical interrupted plicæ, which are more numerous on the inner side. Enamel finely wrinkled ; and the dentine concentric. Base of crown hollowed. Probable length of crown when perfect 2 inches, breadth of base ¾ of an inch.

The teeth differ from those of *Mososaurus* in their narrower proportion, straightness, circular section, and plicæ of the enamel; from those of *Polyptychodon* in the possession of divisional planes and opposed carinæ; and from those of *Pleiosaurus* in the former character and the circular section.

4. PALÆOSAURUS ? (COMPSOSAURUS) PRISCUS, Leidy: ante p. 165.

Half a dozen isolated teeth of this saurian are contained in the collection of Prof. Emmons.

5. Omosaurus perplexus, Leidy.

An enaliosaurian, based upon a number of teeth of varied character, vertebræ, fragments of ribs and other bones, and the impression of a dermal plate, obtained from the coal field of Chatham Co., North Carolina, by Prof. Emmons and also by Prof. M. Tuomey.

Teeth elongated conical, pointed, nearly straight, or more or less moderately curved inwardly, with opposed carinæ on the inner side, which are entire or denticulated; transverse section subcircular, flattened internally; surfaces even, or more or less distinctly fluted on the outer side or all around, and covered with minute interrupted ridges, which are vertical on the even surface, oblique on the fluted surface, and divergent downward in the vicinity of the carinæ. Crown solid, enamel thin, dentine concentric; fang subcylindrical, hollowed at base. Length from 5 lines to 1¾ inches, breadth from 2 lines to 4¾ lines.

Bodies of the vertebræ bi-concave and much constricted, as in *Palæosaurus?* and *Clepsysaurus*. Length of one of the posterior cervical bodies 16 lines, depth of its articular surfaces 17 lines, width 15 lines.

Dermal plate covered with radiating, bifurcating and anastomosing ridges.

Allied to *Clepsysaurus* and *Centemodon*, Lea, and probably identical with them.

LABYRINTHODONTA.

6. Dictyocephalus elegans, Leidy.

Founded on the upper portion of a cranium discovered by Prof. Emmons in the coal-field of Chatham Co., N. C. Plates of the cranium covered with reticular ridges in a general radiant manner. Parietals comparatively short, broader in front than behind; parietal foramen near the centre of the bones. Occipitals quadrate, a little longer than broad. Posterior outline of the cranium with a superficial transverse concavity on each side and not a deep sinus as in *Trematosaurus* and *Archegosaurus*. Breadth of occipital outline 28 lines; length of parietals 8½ lines, breath anteriorly 3¾ lines, posteriorly 3 lines. Probable length of head, considering it to have had nearly the proportions of *Trematosaurus*, 4,inches, breadth 2¼ inches.

PISCES.

7. Ischyrhiza antiqua, Leidy.

The genus was originally based on a tooth found in the Green Sand of New Jersey. Two teeth apparently of a second speceis have been obtained by Prof. Emmons on the Neuse River, N. C.

Crown of the teeth, when perfect, apparently, laterally compressed conical. Fang robust, quadrately pyramidal, curved; with a rugged base which is bifurcated antero-posteriorly and more deeply before than behind. Pulp cavity entirely closed at bottom. Probable length of specimens when entire 1½, and 2 inches; length of fang 10 lines, and 1 inch; breadth of crown at base antero-posteriorly 5 lines, 6 lines; laterally 3¾ l., 4¾ l.; breath of fang at bottom antero-posteriorly 7 l., 8½ l.; laterally 6½ l,, 7 l.

Notice of some Remains of Fishes discovered by Dr. John E. Evans.

By Joseph Leidy, M. D.

1. Clupea humilis, Leidy.

Founded on an impression of the fish upon one half of a clay stone nodule from a tertiary deposit of Green River, Missouri.

Length 3½ inches; greatest depth 16 lines. Dorsal fin with 15 rays; abdominal 7, anal 14; caudal 20? From the head to the position of the anus 28 abdominal spines may be counted.

2. Cladocyclus? occidentalis, Leidy.

Based on specimens of isolated scales, attached to masses of an ash-colored chalk, from the cretaceous deposite of the upper Missouri.

The scales are almost the size of, and bear considerable resemblance to, those of *Catastomus bubalus*. A nearly circular scale is about 1¼ inches in diameter, and an ovoidal scale has been nearly 2 inches wide and 1 inch long. Deep radiant grooves mark the uncovered portion, and minute granule-like points the opposed portion, while the intermediate tracts are smooth.

3. ENCHODUS SHUMARDI, Leidy.

Based on the specimen of a right dental bone found in company with *Cladocyclus occidentalis*. The bone has been about an inch in length, and in the specimen it supports a series of six large teeth, of which the first one is 2 lines long and the last one ¾ of a line. The border of the bone outside of the long teeth is fringed with minute teeth.

The species is named in compliment to Dr. Benj. F. Shumard, of St. Louis, who assisted Dr. Evans in his important explorations.

The Secretary announced the death of Mr. Samuel B. Ashmead, late a member of the Academy.

ELECTION.

Drs. Ellwood Wilson and Robert E. Griffith, of Philadelphia, and Dr. Eugene Francfort, of Middletown, Conn., were elected members of the Academy.